

JC20 Rec'd PCT/PTO 27 MAR 2002

FORM PTO-1390 (REV. 12-2001)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER Mo7029/LeA 34,026 U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 10/089294 To be Assigned
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371			
INTERNATIONAL APPLICATION NO. PCT/EP00/09089	INTERNATIONAL FILING DATE 18 September 2000 (18.09.00)	PRIORITY DATE CLAIMED 28 September 1999 (28.09.99)	
TITLE OF INVENTION Selective Herbicides on the Basis of N-Aryl-Triazoline(thi)ones			
APPLICANT(S) FOR DO/EO/US FEUCHT, Dieter; DREWES, Mark Wilhelm; DAHMEN, Peter; KRAUSKOPF, Birgit; KREMER, Mathias; PONTZEN, Rolf; WELLMANN, Arndt and HAAS, Wilhelm			
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:			
<p>1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.</p> <p>4. <input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31).</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))</p> <p>a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</p> <p>b. <input type="checkbox"/> has been communicated by the International Bureau.</p> <p>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</p> <p>6. <input checked="" type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).</p> <p>a. <input checked="" type="checkbox"/> is attached hereto.</p> <p>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</p> <p>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))</p> <p>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</p> <p>b. <input type="checkbox"/> have been communicated by the International Bureau.</p> <p>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</p> <p>d. <input type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p>			
Items 11 to 20 below concern document(s) or information included:			
11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.			
12. <input checked="" type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.			
13. <input checked="" type="checkbox"/> A FIRST preliminary amendment.			
14. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.			
15. <input type="checkbox"/> A substitute specification.			
16. <input type="checkbox"/> A change of power of attorney and/or address letter.			
17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.			
18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).			
19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).			
20. <input type="checkbox"/> Other items or information:			

JP15 Rec'd PCT/PTO 27 MAR 2002

U.S. APPLICATION NO. (if known, see 37 CFR 1.53) **10/089294** INTERNATIONAL APPLICATION NO. **PCT/EP00/09089**

ATTORNEY'S DOCKET NUMBER
Mo7029/LeA 34,026

21. ☒ The following fees are submitted:

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):

Neither international preliminary examination fee (37 CFR 1.482)
nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO
and International Search Report not prepared by the EPO or JPO **\$1040.00**

International preliminary examination fee (37 CFR 1.482) not paid to
USPTO but International Search Report prepared by the EPO or JPO **\$890.00**

International preliminary examination fee (37 CFR 1.482) not paid to USPTO
but international search fee (37 CFR 1.445(a)(2)) paid to USPTO **\$740.00**

International preliminary examination fee (37 CFR 1.482) paid to USPTO
but all claims did not satisfy provisions of PCT Article 33(I)-(4) **\$710.00**

International preliminary examination fee (37 CFR 1.482) paid to USPTO
and all claims satisfied provisions of PCT Article 33(I)-(4) **\$100.00**

ENTER APPROPRIATE BASIC FEE AMOUNT =

CALCULATIONS PTO USE ONLY

\$ **890.00**

Surcharge of **\$130.00** for furnishing the oath or declaration later than ☐ 20 ☐ 30
months from the earliest claimed priority date (37 CFR 1.492(e)).

\$

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE
Total claims	9 - 20 =	0	x \$18.00
Independent claims	1 - 3 =	0	x \$84.00
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$280.00
TOTAL OF ABOVE CALCULATIONS =			\$
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.			+
SUBTOTAL =			\$ 1070.00
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).			\$
TOTAL NATIONAL FEE =			\$ 1070.00
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property			+ \$ 40.00
TOTAL FEES ENCLOSED =			\$ 1110.00
			Amount to be refunded: \$
			charged: \$

\$

Total claims 9 - 20 = 0 x **\$18.00**

\$

Independent claims 1 - 3 = 0 x **\$84.00**

\$

MULTIPLE DEPENDENT CLAIM(S) (if applicable) + **\$280.00**

\$

TOTAL OF ABOVE CALCULATIONS =

\$

☐ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.

+

SUBTOTAL =

\$ **1070.00**

Processing fee of **\$130.00** for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f)).

\$

TOTAL NATIONAL FEE =

\$ **1070.00**

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **\$40.00** per property

\$

40.00

TOTAL FEES ENCLOSED =

\$ **1110.00**

Amount to be refunded:

\$

charged:

\$

- a. ☐ A check in the amount of \$ _____ to cover the above fees is enclosed.
- b. ☒ Please charge my Deposit Account No. 13-3848 in the amount of \$ 1110.00 to cover the above fees. A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 13-3848. A duplicate copy of this sheet is enclosed.
- d. ☒ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO



00157

PATENT TRADEMARK OFFICE

SIGNATURE

Raymond H. Harmuth

NAME

33,896

REGISTRATION NUMBER

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PATENT APPLICATION
Mo-7029
LeA 34,026

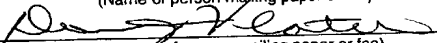
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION OF)
)
DIETER FEUCHT ET AL) PCT/EP00/09089
)
SERIAL NUMBER: TO BE ASSIGNED)
)
FILED: HEREWITH)
)
TITLE: SELECTIVE HERBICIDES)
 ON THE BASIS OF)
 N-ARYL-TRIAZOLINE(THI)ONES)

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Upon the granting of a serial number and filing date and prior to the examination of the subject application, kindly amend the application as follows:

"Express Mail" mailing label number ET671452739US
Date of Deposit March 27, 2002
I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231
Donna J. Veatch
(Name of person mailing paper or fee)

Signature of person mailing paper or fee)

IN THE SPECIFICATION:

Please change the title to read as follows on page 1 and the Abstract page:

--SELECTIVE HERBICIDES ON THE BASIS OF N-ARYL-
TRIAZOLINE(THI)ONES--

IN THE CLAIMS:

Please amend the claims as follows. A marked up copy of the claims to show changes is attached to this Preliminary Amendment.

1. (Once Amended) A novel herbicidal composition comprising:

an effective amount of a synergistic combination of two or more active compounds, wherein said combination of said active compounds includes the combination of

one or more active compounds selected from a Group 1 set of active compounds,

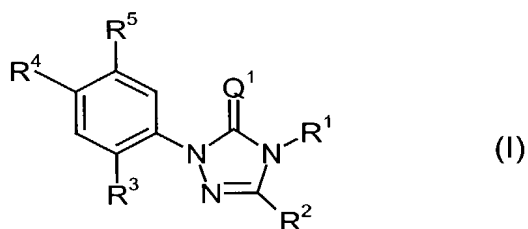
with

one or more active compounds selected from a Group 2 set of active compounds, and

optionally, one or more crop-plant-compatibility improving compounds selected from a Group 3 set of crop-plant-compatibility improving compounds,

wherein

- (a) said Group 1 set of active compounds comprises an N-aryl-triazolin(ethi)one of the Formula (I)



in which

Q¹ represents oxygen or sulphur,

R¹ represents optionally halogen-substituted alkyl having 1 to 5 carbon atoms,

R² represents optionally halogen-substituted alkyl having 1 to 5 carbon atoms,

R³ represents hydrogen or halogen,

R⁴ represents cyano, thiocarbamoyl or halogen, and

R⁵ represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, hydroxyl, mercapto, amino, hydroxyamino, aminosulphonyl, halogen, represents in each case optionally cyano-, hydroxyl-, C₁-C₄-alkoxy-, C₁-C₄-alkylcarbonyl- and/or C₁-C₄-alkoxycarbonyl-substituted alkyl, alkoxy, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylcarbonyl, alkoxycarbonyl or alkylamino having in each case 1 to 6 carbon atoms, represents in each case optionally cyano-, carboxyl-, halogen- and/or C₁-C₄-alkoxycarbonyl-substituted alkenyl, alkynyl, alkenyloxy or alkynyloxy having in each case 2 to 6 carbon atoms, represents in each case optionally halogen-substituted alkylcarbonylamino, alkoxycarbonylamino, alkylsulphonylamino, N,N-bis-alkylsulphonyl-amino or N-alkyl-carbonyl-N-alkylsulphonyl-amino having in each case 1 to 6 carbon atoms in the alkyl groups, or represents in each case optionally cyano-,

halogen-, C₁-C₄-alkyl-, C₁-C₄-halogenoalkyl-, C₁-C₄-alkoxy- or C₁-C₄-halogenoalkoxy-substituted N-phenylcarbonyl-N-alkylsulphonyl-amino, N-pyridylcarbonyl-N-alkylsulphonyl-amino, N-furylcarbonyl-N-alkylsulphonyl-amino or N-thienylcarbonyl-N-alkylsulphonyl-amino having in each case 1 to 6 carbon atoms in the alkyl groups,

and

(b) said Group 2 set of active compounds comprises

2-chloro-N-(ethoxymethyl)-N-(2-ethyl-6-methyl-phenyl)-acetamide (aceto-chlor), 5-(2-chloro-4-trifluoromethyl-phenoxy)-2-nitro-benzoic acid sodium salt (acifluorfen-sodium), 2-chloro-6-nitro-3-phenoxy-benzenamine (aclonifen), 2-chloro-N-(methoxymethyl)-N-(2,6-diethyl-phenyl)-acetamide (alachlor), N-ethyl-N'-i-propyl-6-methylthio-1,3,5-triazine-2,4-diamine (ametryn), 4-amino-N-(1,1-dimethyl-ethyl)-4,5-dihydro-3-(1-methyl-ethyl)-5-oxo-1H-1,2,4-triazole-1-carboxamide (amicarbazon), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(N-methyl-N-methylsulphonyl-sulphamoyl)-urea (amidosulfuron), 1H-1,2,4-triazol-3-amine (amitrole), 6-chloro-4-ethylamino-2-isopropylamino-1,3,5-triazine (atrazine), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-[1-methyl-4-(2-methyl-2H-tetrazol-5-yl)-1H-pyrazol-5-ylsulphonyl]-urea (azimsulfuron), 2-[2,4-dichloro-5-(2-propinyloxy)-phenyl]-5,6,7,8-tetrahydro-1,2,4-triazolo-[4,3-a]-pyridin-3(2H)-one (azafenidin), N-benzyl-2-(4-fluoro-3-trifluoromethyl-phenoxy)-butanamide (beflubutamide), 4-chloro-2-oxo-3(2H)-benzothiazoleacetic acid (benazolin), N-butyl-N-ethyl-2,6-dinitro-4-trifluoromethyl-benzenamine (benfluralin), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-methoxycarbonyl-phenylmethylsulphonyl)-urea (bensulfuron), methyl 2-[2-[4-(3,6-dihydro-3-methyl-2,6-dioxo-4-trifluoromethyl-1(2H)-pyrimidinyl)phenoxy]methyl]-5-ethyl-phenoxy-propanoate (benzfendizone), 3-(2-chloro-4-methylsulphonyl-benzoyl)-4-phenylthio-bicyclo-[3.2.1]-oct-3-en-2-one (benzobicyclon), ethyl N-benzoyl-N-(3,4-dichloro-phenyl)-DL-alaninate (benzoylprop-ethyl), 3-i-propyl-1H-2,1,3-benzothiadiazin-4(3H)-one (bentazone), methyl 5-(2,4-dichloro-phenoxy)-2-nitro-benzoate (bifenox), 2,6-bis-(4,6-dimethoxy-pyrimidin-2-yl-oxy)-benzoic acid sodium salt

(bispyribac-sodium), 2-bromo-3,3-dimethyl-N-(1-methyl-1-phenyl-ethyl)-butanamide (bromobutide), O-(2,4-dinitro-phenyl) 3,5-dibromo-4-hydroxy-benzaldehyde-oxime (bromofenoxim), 3,5-dibromo-4-hydroxy-benzonitrile (bromoxynil), N-butoxymethyl-2-chloro-N-(2,6-diethyl-phenyl)-acetamide (butachlor), [1,1-dimethyl-2-oxo-2-(2-propenyloxy)]-ethyl 2-chloro-5-(3,6-dihydro-3-methyl-2,6-dioxo-4-trifluoromethyl-1(2H)-pyrimidinyl)-benzoate (butafenacil-allyl), 2-(1-ethoximino-propyl)-3-hydroxy-5-[2,4,6-trimethyl-3-(1-oxo-butyl)-phenyl]-2-cyclohexen-1-one (butoxydim), S-ethyl bis-(2-methyl-propyl)-thiocarbamate (butylate), N,N-diethyl-3-(2,4,6-trimethyl-phenyl-sulphonyl)-1H-1,2,4-triazole-1-carboxamide (cafenstrole), 2-[1-[(3-chloro-2-propenyl)-oxy-imino]-propyl]-3-hydroxy-5-(tetrahydro-2H-pyran-4-yl)-2-cyclohexen-1-one (caloxydim, tepraloxym), 2-(4-chloro-2-fluoro-5-(2-chloro-2-ethoxycarbonyl-ethyl)-phenyl)-4-difluoromethyl-5-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one (carfentrazone-ethyl), 2,4-dichloro-1-(3-methoxy-4-nitro-phenoxy)-benzene (chlomethoxyfen), 3-amino-2,5-dichloro-benzoic acid (chloramben), N-(4-chloro-6-methoxy-pyrimidin-2-yl)-N'-(2-ethoxycarbonyl-phenylsulphonyl)-urea (chlorimuron-ethyl), 1,3,5-trichloro-2-(4-nitro-phenoxy)-benzene (chlornitrofen), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(2-chloro-phenylsulphonyl)-urea (chlorsulfuron), N'-(3-chloro-4-methyl-phenyl)-N,N-dimethyl-urea (chlortoluron), ethyl 2-chloro-3-[2-chloro-5-(1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)-phenyl]-2-propanoate (cinidon-ethyl), N-(4,6-dimethoxy-1,3,5-triazin-2-yl)-N'-(2-(2-methoxy-ethoxy)-phenylsulphonyl)-urea (cinosulfuron), 2-[1-[2-(4-chloro-phenoxy)-propoxyamino]butyl]-5-(tetrahydro-2H-thiopyran-3-yl)-1,3-cyclohexanedione (clefoxydim), (E,E)-(+)-2-[1-[(3-chloro-2-propenyl)-oxy]-imino]-propyl]-5-[2-(ethylthio)-propyl]-3-hydroxy-2-cyclohexen-1-one (clethodim), prop-2-ynyl (R)-2-[4-(5-chloro-3-fluoro-pyridin-2-yl-oxy)-phenoxy]-propanoate (clodinafop-propargyl), 3,6-dichloro-pyridine-2-carboxylic acid (clopyralid), methyl 3-chloro-2-[(5-ethoxy-7-fluoro[1,2,4]triazolo[1,5-c]pyrimidin-2-yl-sulphonyl)-amino]-benzoate (cloransulam-methyl), 2-chloro-4-ethylamino-6-(1-cyano-1-methyl-ethylamino)-1,3,5-triazine (cyanazine), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-cyclopropylcarbonyl-phenylsulphonyl)-urea (cyclosulfamuron), 2-(1-ethoximinobutyl)-3-hydroxy-5-(tetrahydro-2H-thiopyran-3-yl)-2-cyclohexen-1-

one (cycloxydim), butyl (R)-2-[4-(4-cyano-2-fluoro-phenoxy)-phenoxy]-propanoate (cyhalofop-butyl), 2,4-dichloro-phenoxyacetic acid (2,4-D), 3,6-dichloro-2-methoxy-benzoic acid (dicamba), (R)-2-(2,4-dichloro-phenoxy)-propanoic acid (dichlorprop-P), methyl-2-[4-(2,4-dichloro-phenoxy)-phenoxy]-propanoate (diclofop-methyl), N-(2,6-dichloro-phenyl)-5-ethoxy-7-fluoro-[1,2,4]-triazolo-[1,5-c]-pyrimidine-2-sulphonamide (diclosulam), 1,2-dimethyl-3,5-diphenyl-1H-pyrazolium methylsulphate (difenzoquat), N-(2,4-difluoro-phenyl)-2-(3-trifluoromethyl-phenoxy)-pyridine-3-carboxamide (diflufenican), 2-[1-[(3,5-difluoro-phenyl)-amino-carbonyl-hydrazono]-ethyl]-pyridine-3-carboxylic acid (diflufenzopyr), S-(1-methyl-1-phenyl-ethyl) 1-piperidine-carbothioate (dimepiperate), 2-chloro-N-(2,4-dimethyl-3-thienyl)-N-(2-methoxy-1-methyl-ethyl)-acetamide (dimethenamid), 2-amino-4-(1-fluoro-1-methyl-ethyl)-6-(1-methyl-2-(3,5-dimethyl-phenoxy)-ethylamino)-1,3,5-triazine (dimexyflam), N3,N3-diethyl-2,4-dinitro-6-trifluoromethyl-1,3-diamino-benzene (dinitramine), 6,7-dihydro-dipyrido[1,2-a:2',1'-c]pyrazindium (diquat), S,S-dimethyl 2-difluoromethyl-4-i-butyl-6-trifluoromethyl-pyridine-3,5-dicarbothioate (dithiopyr), N'-(3,4-dichloro-phenyl)-N,N-dimethyl-urea (diuron), 2-[2-(3-chloro-phenyl)-oxiranylmethyl]-2-ethyl-1H-indene-1,3(2H)-dione (epropodan), S-ethyl dipropylthiocarbamate (EPTC), S-(phenylmethyl) N-ethyl-N-(1,2-dimethyl-propyl)-thiocarbamate (esprocarb), N-ethyl-N-(2-methyl-2-propenyl)-2,6-dinitro-4-trifluoromethyl-benzenamine (ethalfuralin), 2-ethoxy-1-methyl-2-oxo-ethyl (S)-2-chloro-5-(2-chloro-4-trifluoromethyl-phenoxy)-benzoate (ethoxyfen), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-ethoxy-phenoxy-sulphonyl)-urea (ethoxysulfuron), ethyl (R)-2-[4-(6-chloro-benzoxazol-2-yl-oxy)-phenoxy]-propanoate (fenoxaprop-(P)-ethyl), 4-(2-chloro-phenyl)-N-cyclohexyl-N-ethyl-4,5-dihydro-5-oxo-1H-tetrazole-1-carboxamide (fentrazamid), isopropyl N-benzoyl-N-(3-chloro-4-fluoro-phenyl)-DL-alaninate (flamprop-isopropyl), isopropyl N-benzoyl-N-(3-chloro-4-fluoro-phenyl)-L-alaninate (flamprop-isopropyl-L), methyl N-benzoyl-N-(3-chloro-4-fluoro-phenoxy)-DL-alaninate (flamprop-methyl), N-(2,6-difluoro-phenyl)-8-fluoro-5-methoxy-[1,2,4]-triazolo-[1,5-c]-pyrimidine-2-sulphonamide (florasulam), butyl (R)-2-[4-(5-trifluoromethyl-pyridin-2-yl-oxy)-phenoxy]-propanoate (fluazifop, -butyl, -P-butyl), i-propyl 5-

(4-bromo-1-methyl-5-trifluoromethyl-1H-pyrazol-3-yl)-2-chloro-4-fluoro-benzoate (fluazolate), N-(4-fluoro-phenyl)-N-i-propyl-2-(5-trifluoromethyl-1,3,4-thiadiazol-2-yl-oxy)-acetamide (flufenacet), N-(2,6-difluorophenyl)-5-methyl-1,2,4-triazolo[1,5-a]-pyrimidine-2-sulphonamide (flumetsulam), pentyl [2-chloro-4-fluoro-5-(1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)-phenoxy]-acetate (flumiclorac-pentyl), 2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propinyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3-dione (flumioxazin), 2-[4-chloro-2-fluoro-5-[(1-methyl-2-propinyl)-oxy]-phenyl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione (flumipropyn), ethoxycarbonylmethyl 5-(2-chloro-4-trifluoromethyl-phenoxy)-2-nitro-benzoate (fluoroglycofen-ethyl), 1-(4-chloro-3-(2,2,3,3,3-pentafluoro-propoxymethyl)-phenyl)-5-phenyl-1H-1,2,4-triazole-3-carboxamide (flupoxam), 1-isopropyl-2-chloro-5-(3,6-dihydro-3-methyl-2,6-dioxo-4-trifluoromethyl-1(2H)-pyrimidyl)-benzoate (flupropacil), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(3-methoxycarbonyl-6-trifluoromethyl-pyridin-2-yl-sulphonyl)-urea sodium salt (flupyrsulfuron-methyl-sodium), 9-hydroxy-9H-fluorene-9-carboxylic acid (flurenol), (4-amino-3,5-dichloro-6-fluoro-pyridin-2-yl-oxy)-acetic acid (2-butoxy-1-methyl-ethyl ester, 1-methyl-heptyl ester) (fluroxypyr, -butoxypropyl, -meptyl), 5-methylamino-2-phenyl-4-(3-trifluoromethyl-phenyl)-3(2H)-furanone (flurtamone), methyl [(2-chloro-4-fluoro-5-(tetrahydro-3-oxo-1H,3H-[1,3,4]-thiadiazolo-[3,4-a]-pyridazin-1-yliden)-amino)-phenyl]-thio-acetate (fluthiacet-methyl), 5-(2-chloro-4-trifluoromethyl-phenoxy)-N-methylsulphonyl-2-nitro-benzamide (fomesafen), 2-amino-4-(hydroxymethylphosphinyl)-butanoic acid (ammonium salt) (glufosinate-(ammonium)), N-phosphonomethyl-glycine (isopropylammonium) (glyphosate, isopropylammonium), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(3-chloro-4-methoxycarbonyl-1-methyl-pyrazol-5-yl-sulphonyl)-urea (halosulfuron-methyl), (R)-2-[4-(3-chloro-5-trifluoromethyl-pyridin-2-yl-oxy)-phenoxy]-propanoic acid (methyl ester, 2-ethoxy-ethyl ester, butyl ester) (haloxyfop, -methyl, -P-methyl, -ethoxyethyl, -butyl), 3-cyclohexyl-6-dimethylamino-1-methyl-1,3,5-triazine-2,4(1H,3H)-dione (hexazinone), methyl 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-4-methyl-benzoate (imazamethabenz-methyl), 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-

imidazol-2-yl)-5-methyl-pyridine-3-carboxylic acid (imazamethapyr), 2-(4,5-dihydro-4-methyl-4-i-propyl-5-oxo-1H-imidazol-2-yl)-3-pyridine-carboxylic acid (imazapyr), 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-5-methoxymethyl-pyridine-3-carboxylic acid (imazamox), 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-quinoline-3-carboxylic acid (imazaquin), 2-(4,5-dihydro-4-methyl-4-i-propyl-5-oxo-1H-imidazol-2-yl)-5-ethyl-pyridine-3-carboxylic acid (imazethapyr), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-chloro-imidazo[1,2-a]-pyridin-3-yl-sulphonyl)-urea (imazosulfuron), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(5-iodo-2-methoxycarbonyl-phenyl-sulphonyl)-urea sodium salt (iodosulfuron-methyl-sodium), 4-hydroxy-3,5-diiodo-benzonitrile (ioxynil), N,N-dimethyl-N'-(4-isopropyl-phenyl)-urea (isoproturon), N-(3-(1-ethyl-1-methyl-propyl)-isoxazol-5-yl)-2,6-dimethoxy-benzamide (isoxaben), (4-chloro-2-methylsulphonyl-phenyl)-(5-cyclopropyl-isoxazol-4-yl)-methanone (isoxachlortole), (5-cyclopropyl-isoxazol-4-yl)-(2-methylsulphonyl-4-trifluoromethyl-phenyl)-methanone (isoxaflutole), 2-[2-[4-[(3,5-dichloro-2-pyridinyl)-oxy]-phenoxy]-1-oxo-propyl]-isoxazolidine (isoxapyrifop), (2-ethoxy-1-methyl-2-oxo-ethyl)-5-(2-chloro-4-trifluoromethyl-phenoxy)-2-nitrobenzoate (lactofen), N'-(3,4-dichloro-phenyl)-N-methoxy-N-methyl-urea (linuron), (4-chloro-2-methyl-phenoxy)-acetic acid (MCPA), 2-(4-chloro-2-methyl-phenoxy)-propionic acid (mecoprop), 2-(2-benzothiazolyloxy)-N-methyl-N-phenyl-acetamide (mefenacet), 2-(4-methylsulphonyl-2-nitrobenzoyl)-1,3-cyclohexanedione (mesotrione), 4-amino-3-methyl-6-phenyl-1,2,4-triazin-5(4H)-one (metamitron), 2-chloro-N-(2,6-dimethyl-phenyl)-N-(1H-pyrazol-1-yl-methyl)-acetamide (metazachlor), N'-(4-(3,4-dihydro-2-methoxy-2,4,4-trimethyl-2H-1-benzopyran-7-yl-oxy)-phenyl)-N-methoxy-N-methyl-urea (metobenzuron), N'-(4-bromophenyl)-N-methoxy-N-methyl urea (metobromuron), (S)-2-chloro-N-(2-ethyl-6-methyl-phenyl)-N-(2-methoxy-1-methyl-ethyl)-acetamide (metolachlor, S-metolachlor), N-(2,6-dichloro-3-methyl-phenyl)-5,7-dimethoxy-1,2,4-triazolo[1,5-a]-pyrimidine-2-sulphonamide (metosulam), N'-(3-chloro-4-methoxy-phenyl)-N,N-dimethyl-urea (metoxuron), 4-amino-6-tert-butyl-3-methylthio-1,2,4-triazin-5(4H)-one (metribuzin), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(2-methoxycarbonyl-phenylsulphonyl)-urea (met-

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trifluoromethoxy-1,3,5-triazin-2-yl)-N'-(2-trifluoromethyl-phenylsulphonyl)-urea (tritosulfuron), 2-pyridinesulphonamide, N-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]-3-[methyl(methylsulphonyl)amino] (WO-A-92/10660), 2-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]amino]-sulphonyl]-4-[[[(methylsulphonyl)amino]methyl]-methyl benzoate (DE-A 43 35 297)

and

(c) said Group 3 set of crop-plant-compatibility improving compounds comprises

α -(1,3-Dioxolan-2-yl-methoximino)-phenylacetonitrile (oxabetrinil), α -(cyano-methoximino)-phenylacetonitrile (cyometrinil), 4-chloro-N-(1,3-dioxolan-2-yl-methoxy)- α -trifluoro-acetophenoneoxime (fluxofenim), 4,6-dichloro-2-phenyl-pyrimidine (fencloirim), 4-dichloroacetyl-3,4-dihydro-3-methyl-2H-1,4-benz-oxazine (benoxacor), 1-methyl-hexyl 5-chloro-quinoxalin-8-oxy-acetate (clo-quintocet), 2,2-dichloro-N-(2-oxo-2-(2-propenylamino)-ethyl)-N-(2-propenyl)-acetamide (DKA-24), 1,8-naphthalic anhydride, ethyl 1-(2,4-dichloro-phenyl)-5-trichloromethyl-1H-1,2,4-triazole-3-carboxylate (fenchlorazol-ethyl), phenylmethyl 2-chloro-4-trifluoromethyl-thiazole-5-carboxylate (flurazole), 3-dichloroacetyl-5-(2-furanyl)-2,2-dimethyl-oxazolidine (furilazole, MON-13900), 4-dichloroacetyl-1-oxa-4-aza-spiro[4.5]-decane (AD-67), 2-dichloromethyl-2-methyl-1,3-dioxolane (MG-191), 2,2-dichloro-N-(1,3-dioxolan-2-yl-methyl)-N-(2-propenyl)-acetamide (PPG-1292), 2,2-dichloro-N,N-di-2-propenyl-acetamide (dichlormid), N-(4-methyl-phenyl)-N'-(1-methyl-1-phenyl-ethyl)-urea (dymron), 1-dichloroacetyl-hexahydro-3,3,8a-trimethylpyrrolo[1,2-a]-pyrimidin-6(2H)-one (BAS-145138), N-(2-methoxy-benzoyl)-4-(methylaminocarbonyl-amino)-benzenesulphonamide, ethyl 4,5-dihydro-5,5-diphenyl-3-isoxazolecarboxylate (isoxadifen-ethyl), diethyl 1-(2,4-dichlorophenyl)-4,5-dihydro-5-methyl-1H-pyrazole-3,5-dicarboxylate (mefenpyr-diethyl) and 2,4-dichlorophenoxyacetic acid (2,4-D) and its derivatives.

sulphonyl-amino, N-ethylsulphonyl-N-methylsulphonyl-amino, N-acetyl-N-methylsulphonyl-amino, N-propionyl-N-methylsulphonyl-amino, N-n-butyroyl-N-methylsulphonyl-amino, N-i-butyroyl-N-methylsulphonyl-amino, N-s-butyroyl-N-methylsulphonyl-amino, N-pivaloyl-N-methylsulphonyl-amino, N-acetyl-N-ethylsulphonyl-amino, N-propionyl-N-ethylsulphonyl-amino, N-n-butyroyl-N-ethylsulphonyl-amino, N-i-butyroyl-N-ethylsulphonyl-amino, N-s-butyroyl-N-ethylsulphonyl-amino, N-pivaloyl-N-ethylsulphonyl-amino, or represents in each case optionally cyano-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s- or t-butyl-, trifluoromethyl-, methoxy-, ethoxy-, n- or i-propoxy-, difluoromethoxy- or trifluoromethoxy-substituted N-phenylcarbonyl-N-methylsulphonyl-amino, N-phenylcarbonyl-N-ethylsulphonyl-amino, N-thienylcarbonyl-N-methylsulphonyl-amino or N-thienylcarbonyl-N-ethylsulphonyl-amino.

3. (Once Amended) The herbicidal composition according to Claim 1, wherein

- R¹ represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl,
- R² represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl,
- R³ represents hydrogen, fluorine or chlorine,
- R⁴ represents cyano or thiocarbamoyl, and
- R⁵ represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, hydroxyl, mercapto, amino, hydroxyamino, aminosulphonyl, fluorine, chlorine, bromine, represents in each case optionally cyano-, hydroxyl-, methoxy-, ethoxy-, acetyl-, propionyl-, methoxycarbonyl- and/or

ethoxycarbonyl-substituted methyl, ethyl, n- or i-propyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, acetyl, propionyl, n- or i-butyroyl, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl, methylamino, ethylamino, n- or i-propylamino, represents in each case optionally cyano-, carboxyl-, fluorine-, chlorine-, bromine-, methoxycarbonyl- and/or ethoxycarbonyl-substituted ethenyl, propenyl, ethinyl, propinyl, propenyloxy or propinyloxy, represents in each case optionally fluorine- and/or chlorine-substituted acetilamino, propionylamino, methoxycarbonylamino, ethoxycarbonylamino, methylsulphonylamino, ethylsulphonylamino, n- or i-propylsulphonylamino, N,N-bis-methylsulphonylamino, N,N-bis-ethylsulphonylamino, N-ethylsulphonyl-N-methylsulphonylamino, N-acetyl-N-methylsulphonylamino, N-propionyl-N-methylsulphonylamino, N-n-butyroyl-N-methylsulphonylamino, N-i-butyroyl-N-methylsulphonylamino, N-s-butyroyl-N-methylsulphonylamino, N-pivaloyl-N-methylsulphonylamino, N-acetyl-N-ethylsulphonylamino, N-propionyl-N-ethylsulphonylamino, N-n-butyroyl-N-ethylsulphonylamino, N-i-butyroyl-N-ethylsulphonylamino, N-s-butyroyl-N-ethylsulphonylamino, N-pivaloyl-N-ethylsulphonylamino, or represents in each case optionally cyano-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, trifluoromethyl-, methoxy-, ethoxy-, difluoromethoxy- or trifluoromethoxy-substituted N-phenylcarbonyl-N-methylsulphonylamino, N-phenylcarbonyl-N-ethylsulphonylamino, N-thienylcarbonyl-N-methylsulphonylamino or N-thienylcarbonyl-N-ethylsulphonylamino.

4. (Once Amended) The herbicidal composition according to Claim 1 wherein the active compound of said Group 1 is selected from the group consisting of

2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-

triazol-3-one, 2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one.

5. (Once Amended) The herbicidal composition according to Claim 4 wherein the active compound of said Group 1 is the compound 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one.
6. (Once Amended) The herbicidal composition according to Claim 1 wherein the active compound of said Group 2 is selected from the group consisting of atrazine, bromoxynil, chlorimuron-ethyl, clodinafop-propargyl, dicamba, di-

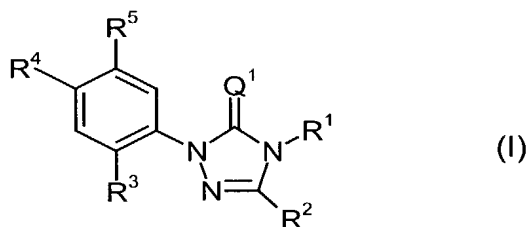
chlorprop-P, diflufenican, dimethenamid, fenoxaprop-(P)-ethyl, fentrazamid, flufenacet, flupyrsulfuron-methyl-sodium, flurtamone, glufosinate-ammonium, glyphosate-isopropylammonium, imazamethapyr, imazamox, iodosulfuron-methyl-sodium, mesotrione, metolachlor, metosulam, metribuzin, metsulfuron-methyl, nicosulfuron, rimsulfuron, sulcotrione, sulfosate, sulfosulfuron, terbutylazine, thifensulfuron-methyl, tralkoxydim, and tribenuron-methyl.

[illegible]

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in which

Q¹ represents oxygen or sulphur,

R¹ represents optionally halogen-substituted alkyl having 1 to 5 carbon atoms,

R² represents optionally halogen-substituted alkyl having 1 to 5 carbon atoms,

R³ represents hydrogen or halogen,

R⁴ represents cyano, thiocarbamoyl or halogen, and

R⁵ represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, hydroxyl, mercapto, amino, hydroxyamino, aminosulphonyl, halogen, represents in each case optionally cyano-, hydroxyl-, C₁-C₄-alkoxy-, C₁-C₄-alkylcarbonyl- and/or C₁-C₄-alkoxycarbonyl-substituted alkyl, alkoxy, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylcarbonyl, alkoxycarbonyl or alkylamino having in each case 1 to 6 carbon atoms, represents in each case optionally cyano-, carboxyl-, halogen- and/or C₁-C₄-alkoxycarbonyl-substituted alkenyl, alkynyl, alkenyloxy or alkynyloxy having in each case 2 to 6 carbon atoms, represents in each case optionally halogen-substituted alkylcarbonylamino, alkoxycarbonylamino, alkylsulphonylamino, N,N-bis-alkylsulphonyl-amino or N-alkyl

dimethoxy-pyrimidin-2-yl)-N'-(2-methoxycarbonyl-phenylmethylsulphonyl)-urea (bensulfuron), methyl 2-[2-[4-(3,6-dihydro-3-methyl-2,6-dioxo-4-trifluoromethyl-1(2H)-pyrimidinyl)phenoxy]methyl]-5-ethyl-phenoxy-propanoate (benzfendizone), 3-(2-chloro-4-methylsulphonyl-benzoyl)-4-phenylthio-bicyclo-[3.2.1]-oct-3-en-2-one (benzobicyclon), ethyl N-benzoyl-N-(3,4-dichloro-phenyl)-DL-alaninate (benzoylprop-ethyl), 3-i-propyl-1H-2,1,3-benzothiadiazin-4(3H)-one (bentazone), methyl 5-(2,4-dichloro-phenoxy)-2-nitro-benzoate (bifenox), 2,6-bis-(4,6-dimethoxy-pyrimidin-2-yl-oxy)-benzoic acid sodium salt (bispyribac-sodium), 2-bromo-3,3-dimethyl-N-(1-methyl-1-phenyl-ethyl)-butanamide (bromobutide), O-(2,4-dinitro-phenyl) 3,5-dibromo-4-hydroxy-benzaldehyde-oxime (bromofenoxim), 3,5-dibromo-4-hydroxy-benzonitrile (bromoxynil), N-butoxymethyl-2-chloro-N-(2,6-diethyl-phenyl)-acetamide (butachlor), [1,1-dimethyl-2-oxo-2-(2-propenyloxy)]-ethyl 2-chloro-5-(3,6-dihydro-3-methyl-2,6-dioxo-4-trifluoromethyl-1(2H)-pyrimidinyl)-benzoate (butafenacil-allyl), 2-(1-ethoximino-propyl)-3-hydroxy-5-[2,4,6-trimethyl-3-(1-oxo-butyl)-phenyl]-2-cyclohexen-1-one (butoxydim), S-ethyl bis-(2-methyl-propyl)-thiocarbamate (butylate), N,N-diethyl-3-(2,4,6-trimethyl-phenyl-sulphonyl)-1H-1,2,4-triazole-1-carboxamide (cafenstrole), 2-[1-[(3-chloro-2-propenyl)-oxy-imino]-propyl]-3-hydroxy-5-(tetrahydro-2H-pyran-4-yl)-2-cyclohexen-1-one (caloxydim, tepraloxym), 2-(4-chloro-2-fluoro-5-(2-chloro-2-ethoxycarbonyl-ethyl)-phenyl)-4-difluoromethyl-5-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one (carfentrazone-ethyl), 2,4-dichloro-1-(3-methoxy-4-nitro-phenoxy)-benzene (chlomethoxyfen), 3-amino-2,5-dichloro-benzoic acid (chloramben), N-(4-chloro-6-methoxy-pyrimidin-2-yl)-N'-(2-ethoxycarbonyl-phenylsulphonyl)-urea (chlorimuron-ethyl), 1,3,5-trichloro-2-(4-nitro-phenoxy)-benzene (chlornitrofen), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(2-chloro-phenylsulphonyl)-urea (chlorsulfuron), N'-(3-chloro-4-methyl-phenyl)-N,N-dimethyl-urea (chlortoluron), ethyl 2-chloro-3-[2-chloro-5-(1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)-phenyl]-2-propanoate (cinidon-ethyl), N-(4,6-dimethoxy-1,3,5-triazin-2-yl)-N'-(2-(2-methoxy-ethoxy)-phenylsulphonyl)-urea (cinosulfuron), 2-[1-[2-(4-chloro-phenoxy)-propoxyamino]butyl]-5-(tetrahydro-2H-thiopyran-3-yl)-1,3-cyclohexanedione (clefoxydim), (E,E)-(+)-2-[1-[(3-chloro-2-propenyl)-oxy]-imino]-propyl]-5-[2-

(ethylthio)-propyl]-3-hydroxy-2-cyclohexen-1-one (clethodim), prop-2-ynyl (R)-2-[4-(5-chloro-3-fluoro-pyridin-2-yl-oxy)-phenoxy]-propanoate (clodinafop-propargyl), 3,6-dichloro-pyridine-2-carboxylic acid (clopyralid), methyl 3-chloro-2-[(5-ethoxy-7-fluoro[1,2,4]triazolo[1,5-c]pyrimidin-2-yl-sulphonyl)-amino]-benzoate (cloransulam-methyl), 2-chloro-4-ethylamino-6-(1-cyano-1-methyl-ethylamino)-1,3,5-triazine (cyanazine), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-cyclopropylcarbonyl-phenylsulphonyl)-urea (cyclosulfamuron), 2-(1-ethoximinobutyl)-3-hydroxy-5-(tetrahydro-2H-thiopyran-3-yl)-2-cyclohexen-1-one (cycloxydim), butyl (R)-2-[4-(4-cyano-2-fluoro-phenoxy)-phenoxy]-propanoate (cyhalofop-butyl), 2,4-dichloro-phenoxyacetic acid (2,4-D), 3,6-dichloro-2-methoxy-benzoic acid (dicamba), (R)-2-(2,4-dichloro-phenoxy)-propanoic acid (dichlorprop-P), methyl-2-[4-(2,4-dichloro-phenoxy)-phenoxy]-propanoate (diclofop-methyl), N-(2,6-dichloro-phenyl)-5-ethoxy-7-fluoro-[1,2,4]-triazolo-[1,5-c]-pyrimidine-2-sulphonamide (diclosulam), 1,2-dimethyl-3,5-diphenyl-1H-pyrazolium methylsulphate (difenzoquat), N-(2,4-difluoro-phenyl)-2-(3-trifluoromethyl-phenoxy)-pyridine-3-carboxamide (diflufenican), 2-[1-[(3,5-difluoro-phenyl)-amino-carbonyl-hydrazono]-ethyl]-pyridine-3-carboxylic acid (diflufenzopyr), S-(1-methyl-1-phenyl-ethyl) 1-piperidine-carbothioate (dimepiperate), 2-chloro-N-(2,4-dimethyl-3-thienyl)-N-(2-methoxy-1-methyl-ethyl)-acetamide (dimethenamid), 2-amino-4-(1-fluoro-1-methyl-ethyl)-6-(1-methyl-2-(3,5-dimethyl-phenoxy)-ethylamino)-1,3,5-triazine (dimexyflam), N3,N3-diethyl-2,4-dinitro-6-trifluoromethyl-1,3-diamino-benzene (dinitramine), 6,7-dihydro-dipyrido[1,2-a:2',1'-c]pyrazindium (diquat), S,S-dimethyl 2-difluoromethyl-4-i-butyl-6-trifluoromethyl-pyridine-3,5-dicarbothioate (dithio-pyr), N'-(3,4-dichloro-phenyl)-N,N-dimethyl-urea (diuron), 2-[2-(3-chloro-phenyl)-oxiranylmethyl]-2-ethyl-1H-indene-1,3(2H)-dione (epropodan), S-ethyl dipropylthiocarbamate (EPTC), S-(phenylmethyl) N-ethyl-N-(1,2-dimethyl-propyl)-thiocarbamate (esprocarb), N-ethyl-N-(2-methyl-2-propenyl)-2,6-dinitro-4-trifluoromethyl-benzenamine (ethalfuralin), 2-ethoxy-1-methyl-2-oxo-ethyl (S)-2-chloro-5-(2-chloro-4-trifluoromethyl-phenoxy)-benzoate (ethoxy-fen), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-ethoxy-phenoxy-sulphonyl)-urea

(ethoxysulfuron), ethyl (R)-2-[4-(6-chloro-benzoxazol-2-yl-oxy)-phenoxy]-propanoate (fenoxaprop-(P)-ethyl), 4-(2-chloro-phenyl)-N-cyclohexyl-N-ethyl-4,5-dihydro-5-oxo-1H-tetrazole-1-carboxamide (fentrazamid), isopropyl N-benzoyl-N-(3-chloro-4-fluoro-phenyl)-DL-alaninate (flamprop-isopropyl), isopropyl N-benzoyl-N-(3-chloro-4-fluoro-phenyl)-L-alaninate (flamprop-isopropyl-L), methyl N-benzoyl-N-(3-chloro-4-fluoro-phenoxy)-DL-alaninate (flamprop-methyl), N-(2,6-difluoro-phenyl)-8-fluoro-5-methoxy-[1,2,4]-triazolo-[1,5-c]-pyrimidine-2-sulphonamide (florasulam), butyl (R)-2-[4-(5-trifluoromethyl-pyridin-2-yl-oxy)-phenoxy]-propanoate (fluazifop, -butyl, -P-butyl), i-propyl 5-(4-bromo-1-methyl-5-trifluoromethyl-1H-pyrazol-3-yl)-2-chloro-4-fluorobenzoate (fluazolate), N-(4-fluoro-phenyl)-N-i-propyl-2-(5-trifluoromethyl-1,3,4-thiadiazol-2-yl-oxy)-acetamide (flufenacet), N-(2,6-difluorophenyl)-5-methyl-1,2,4-triazolo[1,5-a]-pyrimidine-2-sulphonamide (flumetsulam), pentyl [2-chloro-4-fluoro-5-(1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)-phenoxy]-acetate (flumiclorac-pentyl), 2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propinyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3-dione (flumioxazin), 2-[4-chloro-2-fluoro-5-[(1-methyl-2-propinyl)-oxy]-phenyl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione (flumipropyn), ethoxycarbonylmethyl 5-(2-chloro-4-trifluoromethyl-phenoxy)-2-nitro-benzoate (fluoroglycofen-ethyl), 1-(4-chloro-3-(2,2,3,3,3-pentafluoro-propoxymethyl)-phenyl)-5-phenyl-1H-1,2,4-triazole-3-carboxamide (flupoxam), 1-isopropyl-2-chloro-5-(3,6-dihydro-3-methyl-2,6-dioxo-4-trifluoromethyl-1(2H)-pyrimidyl)-benzoate (flupropacil), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(3-methoxycarbonyl-6-trifluoromethyl-pyridin-2-yl-sulphonyl)-urea sodium salt (flupyrsulfuron-methyl-sodium), 9-hydroxy-9H-fluorene-9-carboxylic acid (flurenol), (4-amino-3,5-dichloro-6-fluoro-pyridin-2-yl-oxy)-acetic acid (2-butoxy-1-methyl-ethyl ester, 1-methyl-heptyl ester) (fluroxypyr, -butoxypropyl, -meptyl), 5-methylamino-2-phenyl-4-(3-trifluoromethyl-phenyl)-3(2H)-furanone (flurtamone), methyl [(2-chloro-4-fluoro-5-(tetrahydro-3-oxo-1H,3H-[1,3,4]-thiadiazolo-[3,4-a]-pyridazin-1-yliden)-amino)-phenyl]-thio-acetate (fluthiacet-methyl), 5-(2-chloro-4-trifluoromethyl-phenoxy)-N-methylsulphonyl-2-nitro-benzamide (fomesafen), 2-amino-4-(hydroxymethylphosphinyl)-butanoic acid (ammonium salt)

(glufosinate-(ammonium)), N-phosphonomethyl-glycine (isopropylammonium) (glyphosate, isopropylammonium), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(3-chloro-4-methoxycarbonyl-1-methyl-pyrazol-5-yl-sulphonyl)-urea (halo-sulfuron-methyl), (R)-2-[4-(3-chloro-5-trifluoromethyl-pyridin-2-yl-oxy)-phenoxy]-propanoic acid (methyl ester, 2-ethoxy-ethyl ester, butyl ester) (haloxyfop, -methyl, -P-methyl, -ethoxyethyl, -butyl), 3-cyclohexyl-6-dimethyl-amino-1-methyl-1,3,5-triazine-2,4(1H,3H)-dione (hexazinone), methyl 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-4-methyl-benzoate (imazamethabenz-methyl), 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-5-methyl-pyridine-3-carboxylic acid (imazamethapyr), 2-(4,5-dihydro-4-methyl-4-i-propyl-5-oxo-1H-imidazol-2-yl)-3-pyridine-carboxylic acid (imazapyr), 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-5-methoxymethyl-pyridine-3-carboxylic acid (imazamox), 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-quinoline-3-carboxylic acid (imazaquin), 2-(4,5-dihydro-4-methyl-4-i-propyl-5-oxo-1H-imidazol-2-yl)-5-ethyl-pyridine-3-carboxylic acid (imazethapyr), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-chloro-imidazo[1,2-a]-pyridin-3-yl-sulphonyl)-urea (imazosulfuron), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(5-iodo-2-methoxycarbonyl-phenyl-sulphonyl)-urea sodium salt (iodosulfuron-methyl-sodium), 4-hydroxy-3,5-diiodo-benzonitrile (ioxynil), N,N-dimethyl-N'-(4-isopropyl-phenyl)-urea (isoproturon), N-(3-(1-ethyl-1-methyl-propyl)-isoxazol-5-yl)-2,6-dimethoxy-benzamide (isoxaben), (4-chloro-2-methylsulphonyl-phenyl)-(5-cyclopropyl-isoxazol-4-yl)-methanone (isoxachlortole), (5-cyclopropyl-isoxazol-4-yl)-(2-methylsulphonyl-4-trifluoromethyl-phenyl)-methanone (isoxaflutole), 2-[2-[4-[(3,5-dichloro-2-pyridinyl)-oxy]-phenoxy]-1-oxo-propyl]-isoxazolidine (isoxapyrifop), (2-ethoxy-1-methyl-2-oxo-ethyl)-5-(2-chloro-4-trifluoromethyl-phenoxy)-2-nitrobenzoate (lactofen), N'-(3,4-dichloro-phenyl)-N-methoxy-N-methyl-urea (linuron), (4-chloro-2-methyl-phenoxy)-acetic acid (MCPA), 2-(4-chloro-2-methyl-phenoxy)-propionic acid (mecoprop), 2-(2-benzothiazolyloxy)-N-methyl-N-phenyl-acetamide (mefenacet), 2-(4-methylsulphonyl-2-nitrobenzoyl)-1,3-cyclohexanedione (mesotrione), 4-amino-3-methyl-6-phenyl-1,2,4-triazin-5(4H)-one (metamitron), 2-chloro-N-(2,6-dimethyl-phenyl)-N-(1H-

pyrazol-1-yl-methyl)-acetamide (metazachlor), N'-(4-(3,4-dihydro-2-methoxy-2,4,4-trimethyl-2H-1-benzopyran-7-yl-oxy)-phenyl)-N-methoxy-N-methyl-urea (metobenzuron), N'-(4-bromophenyl)-N-methoxy-N-methyl urea (metobromuron), (S)-2-chloro-N-(2-ethyl-6-methyl-phenyl)-N-(2-methoxy-1-methyl-ethyl)-acetamide (metolachlor, S-metolachlor), N-(2,6-dichloro-3-methyl-phenyl)-5,7-dimethoxy-1,2,4-triazolo[1,5-a]-pyrimidine-2-sulphonamide (metosulam), N'-(3-chloro-4-methoxy-phenyl)-N,N-dimethyl-urea (metoxuron), 4-amino-6-tert-butyl-3-methylthio-1,2,4-triazin-5(4H)-one (metribuzin), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(2-methoxycarbonyl-phenylsulphonyl)-urea (met-sulfuron-methyl), S-ethyl-hexahydro-1H-azepine-1-carbothioate (molinate), 2-(2-naphthyl-oxy)-N-phenyl-propanamide (naproanilide), N-butyl-N'-(3,4-dichloro-phenyl)-N-methyl-urea (neburon), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(3-dimethylcarbamoyl-pyridin-2-yl-sulphonyl)-urea (nicosulfuron), S-(2-chloro-benzyl)-N,N-diethyl-thiocarbamate (orbencarb), 4-dipropylamino-3,5-dinitro-benzenesulphonamide (oryzalin), 3-[2,4-dichloro-5-(2-propinyloxy)-phenyl]-5-(t-butyl)-1,3,4-oxadiazol-2(3H)-one (oxadiargyl), 3-[2,4-dichloro-5-(1-methylethoxy)-phenyl]-5-(t-butyl)-1,3,4-oxadiazol-2(3H)-one (oxadiazon), N-(4,6-dimethyl-pyrimidin-2-yl)-N'-(2-oxetan-3-yl-oxycarbonyl-phenylsulphonyl)-urea (oxasulfuron), 3-[1-(3,5-dichlorophenyl)-1-i-propyl]-2,3-dihydro-6-methyl-5-phenyl-4H-1,3-oxazin-4-one (oxaziclomefone), 2-chloro-1-(3-ethoxy-4-nitro-phenoxy)-4-trifluoromethylbenzene (oxyfluorfen), 1,1'-dimethyl-4,4'-bi-pyridinium (paraquat), 1-amino-N-(1-ethyl-propyl)-3,4-dimethyl-2,6-dinitro-benzene (pendimethalin), 4-(t-butyl)-N-(1-ethyl-propyl)-2,6-dinitro-benzenamine (pendralin), 4-amino-3,5,6-trichloro-pyridine-2-carboxylic acid (picloram), 2-chloro-N-(2,6-diethyl-phenyl)-N-(2-propoxy-ethyl)-acetamide (pretilachlor), N-(4-fluoro-phenyl)-6-(3-trifluoromethyl-phenoxy)-pyridine-2-carboxamide (picolinafen), N-(4,6-bisdifluoromethoxy-pyrimidin-2-yl)-N'-(2-methoxycarbonyl-phenylsulphonyl)-urea (primisulfuron-methyl), 2-chloro-N-isopropyl-N-phenyl-acetamide (propachlor), N-(3,4-dichloro-phenyl)-propanamide (propanil), 2-chloro-N-(2-ethyl-6-methyl-phenyl)-N-[(1-methyl-ethoxy)-methyl]-acetamide (propisochlor), S-phenylmethyl N,N-dipropyl-thiocarbamate

(prosulfocarb), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(2-(3,3,3-trifluoropropyl)-phenylsulphonyl)-urea (prosulfuron), ethyl [2-chloro-5-(4-chloro-5-difluoromethoxy-1-methyl-1H-pyrazol-3-yl)-4-fluoro-phenoxy]-acetate (pyraflufen-ethyl), 4-(2,4-dichloro-benzoyl)-1,3-dimethyl-5-(4-methyl-phenylsulphonyloxy)-pyrazole (pyrazolate), 4-(2,4-dichloro-benzoyl)-1,3-dimethyl-5-(phenylcarbonylmethoxy)-pyrazole (pyrazoxyfen), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(4-ethoxycarbonyl-1-methyl-pyrazol-5-yl-sulphonyl)-urea (pyrazosulfuron-ethyl), O-[2,6-bis-(4,6-dimethoxy-pyrimidin-2-yl-oxy)-benzoyl] diphenylmethanone-oxime (pyribenzoxim), 6-chloro-3-phenyl-4-pyridazinol (pyridafol), O-(6-chloro-3-phenyl-pyridazin-4-yl) S-octyl thiocarbonate (pyridate), 6-chloro-3-phenylpyridazin-4-ol (pyridatol), methyl 2-(4,6-dimethoxy-pyrimidin-2-yl-oxy)-benzoate (pyriminobac-methyl), 2-chloro-6-(4,6-dimethoxy-pyrimidin-2-ylthio)-benzoic acid sodium salt (pyrithiobac-sodium), 7-chloro-3-methylquinoline-8-carboxylic acid (quinmerac), 2-[4-(6-chloro-2-quinoxalinyloxy)-phenoxy]-propanoic acid (ethyl ester, tetrahydro-2-furanyl-methyl ester) (quizalofop, -ethyl, -P-ethyl, -P-tefuryl), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(3-ethylsulphonyl-pyridin-2-yl-sulphonyl)-urea (rimsulfuron), 2-(1-ethoximino-butyl)-5-(2-ethylthiopropyl)-3-hydroxy-2-cyclohexen-1-one (sethoxydim), 6-chloro-2,4-bis-ethylamino-1,3,5-triazine (simazin), 2-(2-chloro-4-methylsulphonyl-benzoyl)-cyclohexane-1,3-dione (sulcotrione), 2-(2,4-dichloro-5-methylsulphonylamino-phenyl)-4-difluoromethyl-5-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one (sulfentrazone), N-phosphonomethyl-glycine-trimethylsulphonium (sulfosate), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-ethylsulphonyl)-imidazo[1,2-a]pyridine-3-sulphonamide (sulfosulfuron), 6-chloro-4-ethylamino-2-tert-butylamino-1,3,5-triazine (terbuthylazine), 2-tert-butylamino-4-ethylamino-6-methylthio-1,3,5-triazine (terbutryn), 2-chloro-N-(2,6-dimethylphenyl)-N-(3-methoxy-2-thienyl-methyl)-acetamide (thienylchlor), methyl 2-difluoromethyl-5-(4,5-dihydro-thiazol-2-yl)-4-(2-methyl-propyl)-6-trifluoromethyl-pyridine-3-carboxylate (thiazopyr), 6-(6,7-dihydro-6,6-dimethyl-3H,5H-pyrrolo[2,1-c]-1,2,4-thiadiazol-3-ylideneamino)-7-fluoro-4-(2-propinyl)-2H-1,4-benzoxazin-3(4H)-one (thidiazimin), N-(4-methoxy-6-methyl-1,3,5-tri-

quintocet), 2,2-dichloro-N-(2-oxo-2-(2-propenylamino)-ethyl)-N-(2-propenyl)-acetamide (DKA-24), 1,8-naphthalic anhydride, ethyl 1-(2,4-dichloro-phenyl)-5-trichloromethyl-1H-1,2,4-triazole-3-carboxylate (fenchlorazol-ethyl), phenylmethyl 2-chloro-4-trifluoromethyl-thiazole-5-carboxylate (flurazole), 3-dichloroacetyl-5-(2-furanyl)-2,2-dimethyl-oxazolidine (furilazole, MON-13900), 4-dichloroacetyl-1-oxa-4-aza-spiro[4.5]-decane (AD-67), 2-dichloromethyl-2-methyl-1,3-dioxolane (MG-191), 2,2-dichloro-N-(1,3-dioxolan-2-yl-methyl)-N-(2-propenyl)-acetamide (PPG-1292), 2,2-dichloro-N,N-di-2-propenyl-acetamide (dichlormid), N-(4-methyl-phenyl)-N'-(1-methyl-1-phenyl-ethyl)-urea (dymron), 1-dichloroacetyl-hexahydro-3,3,8a-trimethylpyrrolo[1,2-a]-pyrimidin-6(2H)-one (BAS-145138), N-(2-methoxy-benzoyl)-4-(methylaminocarbonyl-amino)-benzenesulphonamide, ethyl 4,5-dihydro-5,5-diphenyl-3-isoxazolecarboxylate (isoxadifen-ethyl), diethyl 1-(2,4-dichlorophenyl)-4,5-dihydro-5-methyl-1H-pyrazole-3,5-dicarboxylate (mefenpyr-diethyl) and 2,4-dichlorophenoxyacetic acid (2,4-D) and its derivatives.

~~("Active compounds of group 3").~~

2. (Once Amended) The herbicidal composition according to Claim 1,
characterised in that wherein

R¹ represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl,

R² represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl,

R³ represents hydrogen, fluorine, chlorine or bromine,

R⁴ represents cyano, thiocarbamoyl, fluorine, chlorine or bromine,

R⁵ represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, hydroxyl, mercapto, amino, hydroxyamino, aminosulphonyl, fluorine, chlorine, bromine, represents in each case optionally cyano-, hydroxyl-, methoxy-, ethoxy-, acetyl-, propionyl-, methoxycarbonyl- and/or ethoxycarbonyl-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl, methoxy, ethoxy, n- or i-propoxy, n-, i-, s- or t-butoxy, methylthio, ethylthio, n- or i-propylthio, n-, i-, s- or t-butylthio, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, acetyl, propionyl, n- or i-butyroyl, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl, methylamino, ethylamino, n- or i-propylamino, n-, i-, s- or t-butylamino, represents in each case optionally cyano-, carboxyl-, fluorine-, chlorine-, bromine-, methoxycarbonyl- and/or ethoxycarbonyl-substituted ethenyl, propenyl, butenyl, ethinyl, propinyl, butinyl, propenyloxy, butenyloxy, propinyloxy or butinyloxy, represents in each case optionally fluorine- and/or chlorine-substituted acetylamino, propionylamino, methoxycarbonylamino, ethoxycarbonylamino, methylsulphonylamino, ethylsulphonylamino, n- or i-propylsulphonylamino, n-, i-, s- or t-butylsulphonylamino, N,N-bis-methylsulphonylamino, N,N-bis-ethylsulphonylamino, N-ethylsulphonyl-N-methylsulphonylamino, N-acetyl-N-methylsulphonylamino, N-propionyl-N-methylsulphonylamino, N-n-butyroyl-N-methylsulphonylamino, N-i-butyroyl-N-methylsulphonylamino, N-s-butyroyl-N-methylsulphonylamino, N-pivaloyl-N-methylsulphonylamino, N-acetyl-N-ethylsulphonylamino, N-propionyl-N-ethylsulphonylamino, N-n-butyroyl-N-ethylsulphonylamino, N-i-butyroyl-N-ethylsulphonylamino, N-s-butyroyl-N-ethylsulphonylamino, N-pivaloyl-N-ethylsulphonylamino, or represents in each case optionally cyano-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s- or t-butyl-, trifluoromethyl-, methoxy-, ethoxy-, n- or i-propoxy-, difluoromethoxy- or trifluoromethoxy-substituted N-phenylcarbonyl-N-methylsulphonylamino, N-phenylcarbonyl-N-ethylsulphonylamino, N-thienylcarbonyl-N-methylsulphonylamino or N-thienylcarbonyl-N-ethylsulphonylamino.

3. (Once Amended) The herbicidal composition according to Claim 1,
characterised in that wherein

R¹ represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl,

R² represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl,

R³ represents hydrogen, fluorine or chlorine,

R⁴ represents cyano or thiocarbamoyl, and

R⁵ represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, hydroxyl, mercapto, amino, hydroxyamino, aminosulphonyl, fluorine, chlorine, bromine, represents in each case optionally cyano-, hydroxyl-, methoxy-, ethoxy-, acetyl-, propionyl-, methoxycarbonyl- and/or ethoxycarbonyl-substituted methyl, ethyl, n- or i-propyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, acetyl, propionyl, n- or i-butyryl, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl, methylamino, ethylamino, n- or i-propylamino, represents in each case optionally cyano-, carboxyl-, fluorine-, chlorine-, bromine-, methoxycarbonyl- and/or ethoxycarbonyl-substituted ethenyl, propenyl, ethinyl, propinyl, propenyloxy or propinyloxy, represents in each case optionally fluorine- and/or chlorine-substituted acetylamino, propionylamino, methoxycarbonylamino, ethoxycarbonylamino, methylsulphonylamino, ethylsulphonylamino, n- or i-propylsulphonylamino, N,N-bis-methylsulphonylamino, N,N-bis-ethylsulphonylamino, N-ethylsulphonyl-N-methylsulphonylamino, N-acetyl-N-methylsulphonylamino, N-propionyl-N-methylsulphonylamino, N-n-

butyroyl-N-methylsulphonyl-amino, N-i-butyroyl-N-methylsulphonyl-amino, N-s-butyroyl-N-methylsulphonyl-amino, N-pivaloyl-N-methylsulphonyl-amino, N-acetyl-N-ethylsulphonyl-amino, N-propionyl-N-ethylsulphonyl-amino, N-n-butyroyl-N-ethylsulphonyl-amino, N-i-butyroyl-N-ethylsulphonyl-amino, N-s-butyroyl-N-ethylsulphonyl-amino, N-pivaloyl-N-ethylsulphonyl-amino, or represents in each case optionally cyano-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, tri-fluoromethyl-, methoxy-, ethoxy-, difluoromethoxy- or trifluoromethoxy-substituted N-phenylcarbonyl-N-methylsulphonyl-amino, N-phenylcarbonyl-N-ethylsulphonyl-amino, N-thienylcarbonyl-N-methylsulphonyl-amino or N-thienylcarbonyl-N-ethylsulphonyl-amino.

4. (Once Amended) The herbicidal composition according to any of Claims 1 to 3, characterised in that wherein the active compound of said group 1 is selected from the following compounds: group consisting of

2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-

3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one.

5. (Once Amended) The herbicidal composition according to Claim 4 characterised in that wherein the active compound of said group 1 is the compound 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one.
6. (Once Amended) The herbicidal composition according to any of Claims 1 to 5, characterised in that wherein the active compound of said group 2 is selected from the group consisting of atrazine, bromoxynil, chlorimuron-ethyl, clodinafop-propargyl, dicamba, dichlorprop-P, diflufenican, dimethenamid, fenoxaprop-(P)-ethyl, fentrazamid, flufenacet, flupyrsulfuron-methyl-sodium, flurtamone, glufosinate-ammonium, glyphosate-isopropylammonium, imazamethapyr, imazamox, iodosulfuron-methyl-sodium, mesotrione, metolachlor, metosulam, metribuzin, metsulfuron-methyl, nicosulfuron, rimsulfuron, sulcotrione, sulfosate, sulfosulfuron, terbutylazine, thifensulfuron-methyl, tralkoxydim, and tribenuron-methyl.
7. (Once Amended) The herbicidal composition according to any of Claims 1 to 6, characterised in that wherein the active compound of said group 3 is selected from the group consisting of 1-methylhexyl 5-chloro-quinoxalin-8-

oxy-acetate (cloquintocet), ethyl 1-(2,4-dichloro-phenyl)-5-trichloromethyl-1H-1,2,4-triazole-3-carboxylate (fenchlorazol-ethyl), ethyl-4,5-dihydro-5,5-diphenyl-3-isoxazolecarboxylate (isoxadifen-ethyl), diethyl 1-(2,4-dichloro-phenyl)-4,5-dihydro-5-methyl-1H-pyrazole-3,5-dicarboxylate (mefenpyr-diethyl) and 2,4-dichlorophenoxyacetic acid (2,4-D) and its derivatives.

8. (Once Amended) The herbicidal composition according to any of Claims 1 to 7, characterised in that wherein from 0.01 to 1000 parts by weight, preferably from 0.02 to 500 parts by weight, particularly preferably from 0.05 to 100 parts by weight of said one or more active compounds of selected from said gGroup 2 set of active compounds are present per part by weight of said one or more active compounds of selected from said gGroup 1 set of active compounds.
9. (Once Amended) Use of a composition according to any of Claims 1 to 7 A method for controlling undesirable plants comprising the step of applying an effective amount of the herbicidal composition according to any one of Claims 1 to 8 to a member selected from the group consisting of said plant, a habitat of said plant, and combinations thereof.

Selective herbicides based on N-aryl-triazolin(ethi)ones

The invention relates to novel herbicidal synergistic active compound combinations comprising on the one hand known N-aryl-triazolin(ethi)ones and on the other hand known herbicidally active compounds and/or compounds which improve crop plant compatibility and which can be used with particularly good results for the selective control of weeds in various crops of useful plants.

N-aryl-triazolin(ethi)ones form, as herbicidally active substances, part of the subject-matter of a number of patent applications (cf. DE-A-3024316, DE-A-3514057, DE-A-3636318, EP-A-220952, EP-A-370332, EP-A-597360, EP-A-609734, 5 US-A-4702763, US-A-4806145, US-A-4818275, US-A-4906284, US-A-4909831, US-A-5035740, US-A-5041155, WO-A-85/01637, WO-A-85/04307, WO-A-86/02642, WO-A-86/04481, WO-A-87/00730, WO-A-87/03782, WO-A-88/09617, WO-A-90/02120, WO-A-95/30661, WO-A-99/37153). However, the known N-aryl-triazolin(ethi)ones have a number of gaps in their activity.

10 Surprisingly, it has now been found that a number of known active compounds from the group of the N-aryl-triazolin(ethi)ones exhibit, when used together with known herbicidally active compounds, synergistic effects with respect to their herbicidal action, and can be used particularly advantageously as broad-spectrum combination 15 preparations for the selective control of weeds in crops of useful plants, such as, for example, in cotton, barley, potatoes, maize, rice, soya, sunflowers, wheat and sugar cane.

20 The invention provides selective herbicidal compositions, characterised in that they contain an effective amount of an active compound combination comprising

(a) at least one N-aryl-triazolin(ethi)one of the general formula (I)

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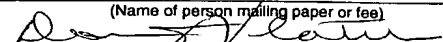
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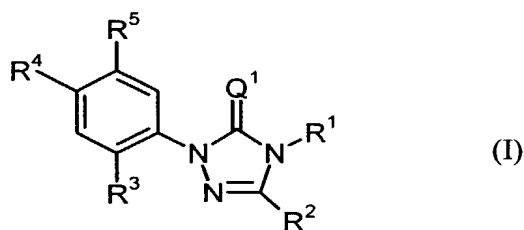
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in which

- 5 Q^1 represents oxygen or sulphur,
- R^1 represents optionally halogen-substituted alkyl having 1 to 5 carbon atoms,
- R^2 represents optionally halogen-substituted alkyl having 1 to 5 carbon atoms,
- 10 R^3 represents hydrogen or halogen,
- R^4 represents cyano, thiocarbamoyl or halogen, and
- 15 R^5 represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, hydroxyl, mercapto, amino, hydroxyamino, aminosulphonyl, halogen, represents in each case optionally cyano-, hydroxyl-, C_1 - C_4 -alkoxy-, C_1 - C_4 -alkylcarbonyl- and/or C_1 - C_4 -alkoxycarbonyl-substituted alkyl, alkoxy, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylcarbonyl, alkoxycarbonyl or alkylamino having in each case 1 to 6 carbon atoms, represents in each case optionally
- 20 cyano-, carboxyl-, halogen- and/or C_1 - C_4 -alkoxycarbonyl-substituted alkenyl, alkynyl, alkenyloxy or alkynyloxy having in each case 2 to 6 carbon atoms, represents in each case optionally halogen-substituted alkylcarbonylamino, alkoxycarbonylamino, alkylsulphonylamino, N,N-bis-alkylsulphonyl-amino or N-alkylcarbonyl-N-alkylsulphonyl-amino having in each case 1 to 6 carbon
- 25 atoms in the alkyl groups, or represents in each case optionally cyano-, halogen-, C_1 - C_4 -alkyl-, C_1 - C_4 -halogenoalkyl-, C_1 - C_4 -alkoxy- or C_1 - C_4 -halogenoalkoxy-substituted N-phenylcarbonyl-N-alkylsulphonyl-amino,

N-pyridylcarbonyl-N-alkylsulphonyl-amino, N-furylcarbonyl-N-alkylsulphonyl-amino or N-thienylcarbonyl-N-alkylsulphonyl-amino having in each case 1 to 6 carbon atoms in the alkyl groups,

5 ("Active compounds of group 1")

and

10 (b) at least one compound from a second group of herbicides comprising the active compounds listed below:

2-chloro-N-(ethoxymethyl)-N-(2-ethyl-6-methyl-phenyl)-acetamide (acetochlor),
 5-(2-chloro-4-trifluoromethyl-phenoxy)-2-nitro-benzoic acid sodium salt (acifluor-
 fen-sodium), 2-chloro-6-nitro-3-phenoxy-benzenamine (aclonifen), 2-chloro-N-
 15 (methoxymethyl)-N-(2,6-diethyl-phenyl)-acetamide (alachlor), N-ethyl-N'-i-propyl-6-
 methylthio-1,3,5-triazine-2,4-diamine (ametryn), 4-amino-N-(1,1-dimethyl-ethyl)-
 4,5-dihydro-3-(1-methyl-ethyl)-5-oxo-1H-1,2,4-triazole-1-carboxamide
 (amicarbazone), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(N-methyl-N-methyl-
 sulphonyl-sulphamoyl)-urea (amidosulfuron), 1H-1,2,4-triazol-3-amine (amitrole),
 20 6-chloro-4-ethylamino-2-isopropylamino-1,3,5-triazine (atrazine), N-(4,6-dimethoxy-
 pyrimidin-2-yl)-N'-[1-methyl-4-(2-methyl-2H-tetrazol-5-yl)-1H-pyrazol-5-yl-
 sulphonyl]-urea (azimsulfuron), 2-[2,4-dichloro-5-(2-propinyloxy)-phenyl]-5,6,7,8-
 tetrahydro-1,2,4-triazolo-[4,3-a]-pyridin-3(2H)-one (azafenidin), N-benzyl-2-(4-
 fluoro-3-trifluoromethyl-phenoxy)-butanamide (beflubutamide), 4-chloro-2-oxo-
 25 3(2H)-benzothiazoleacetic acid (benazolin), N-butyl-N-ethyl-2,6-dinitro-4-tri-
 fluoromethyl-benzenamine (benfluralin), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-
 methoxycarbonyl-phenylmethylsulphonyl)-urea (bensulfuron), methyl 2-[2-[4-(3,6-
 dihydro-3-methyl-2,6-dioxo-4-trifluoromethyl-1(2H)-pyrimidinyl)phenoxy]methyl]-
 5-ethyl-phenoxy-propanoate (benzfendizone), 3-(2-chloro-4-methylsulphonyl-benzo-
 30 yl)-4-phenylthio-bicyclo-[3.2.1]-oct-3-en-2-one (benzobicyclon), ethyl N-benzoyl-N-
 (3,4-dichloro-phenyl)-DL-alaninate (benzoylprop-ethyl), 3-i-propyl-1H-2,1,3-benzo-

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sulphonyl)-urea (cyclosulfamuron), 2-(1-ethoximinobutyl)-3-hydroxy-5-(tetrahydro-
 2H-thiopyran-3-yl)-2-cyclohexen-1-one (cycloxydim), butyl (R)-2-[4-(4-cyano-2-
 fluoro-phenoxy)-phenoxy]-propanoate (cyhalofop-butyl), 2,4-dichloro-phenoxyacetic
 acid (2,4-D), 3,6-dichloro-2-methoxy-benzoic acid (dicamba), (R)-2-(2,4-dichloro-
 5 phenoxy)-propanoic acid (dichlorprop-P), methyl-2-[4-(2,4-dichloro-phenoxy)-phen-
 oxy]-propanoate (diclofop-methyl), N-(2,6-dichloro-phenyl)-5-ethoxy-7-fluoro-
 [1,2,4]-triazolo-[1,5-c]-pyrimidine-2-sulphonamide (diclosulam), 1,2-dimethyl-3,5-
 diphenyl-1H-pyrazolium methylsulphate (difenzoquat), N-(2,4-difluoro-phenyl)-2-(3-
 trifluoromethyl-phenoxy)-pyridine-3-carboxamide (diflufenican), 2-[1-[(3,5-difluoro-
 10 phenyl)-amino-carbonyl-hydrazono]-ethyl]-pyridine-3-carboxylic acid (diflufenzo-
 pyr), S-(1-methyl-1-phenyl-ethyl) 1-piperidine-carbothioate (dimepiperate), 2-chloro-
 N-(2,4-dimethyl-3-thienyl)-N-(2-methoxy-1-methyl-ethyl)-acetamide (dimethen-
 amid), 2-amino-4-(1-fluoro-1-methyl-ethyl)-6-(1-methyl-2-(3,5-dimethyl-phenoxy)-
 ethylamino)-1,3,5-triazine (dimexyflam), N₃N₃-diethyl-2,4-dinitro-6-
 15 trifluoromethyl-1,3-diamino-benzene (dinitramine), 6,7-dihydro-dipyrido[1,2-a:2',1'-
 c]pyrazindium (diquat), S,S-dimethyl 2-difluoromethyl-4-i-butyl-6-trifluoromethyl-
 pyridine-3,5-dicarbothioate (dithiopyr), N'-(3,4-dichloro-phenyl)-N,N-dimethyl-urea
 (diuron), 2-[2-(3-chloro-phenyl)-oxiranylmethyl]-2-ethyl-1H-indene-1,3(2H)-dione
 (epropodan), S-ethyl dipropylthiocarbamate (EPTC), S-(phenylmethyl) N-ethyl-N-
 20 (1,2-dimethyl-propyl)-thiocarbamate (esprocarb), N-ethyl-N-(2-methyl-2-propenyl)-
 2,6-dinitro-4-trifluoromethyl-benzenamine (ethalfluralin), 2-ethoxy-1-methyl-2-oxo-
 ethyl (S)-2-chloro-5-(2-chloro-4-trifluoromethyl-phenoxy)-benzoate (ethoxyfen), N-
 (4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-ethoxy-phenoxy-sulphonyl)-urea (ethoxy-
 sulfuron), ethyl (R)-2-[4-(6-chloro-benzoxazol-2-yl-oxy)-phenoxy]-propanoate
 25 (fenoxaprop-(P)-ethyl), 4-(2-chloro-phenyl)-N-cyclohexyl-N-ethyl-4,5-dihydro-5-
 oxo-1H-tetrazole-1-carboxamide (fentrazamid), isopropyl N-benzoyl-N-(3-chloro-4-
 fluoro-phenyl)-DL-alaninate (flamprop-isopropyl), isopropyl N-benzoyl-N-(3-chloro-
 4-fluoro-phenyl)-L-alaninate (flamprop-isopropyl-L), methyl N-benzoyl-N-(3-chloro-
 4-fluoro-phenoxy)-DL-alaninate (flamprop-methyl), N-(2,6-difluoro-phenyl)-8-
 30 fluoro-5-methoxy-[1,2,4]-triazolo-[1,5-c]-pyrimidine-2-sulphonamide (florasulam),
 butyl (R)-2-[4-(5-trifluoromethyl-pyridin-2-yl-oxy)-phenoxy]-propanoate (fluazifop,

-butyl, -P-butyl), i-propyl 5-(4-bromo-1-methyl-5-trifluoromethyl-1H-pyrazol-3-yl)-2-chloro-4-fluoro-benzoate (fluazolate), N-(4-fluoro-phenyl)-N-i-propyl-2-(5-trifluoromethyl-1,3,4-thiadiazol-2-yl-oxy)-acetamide (flufenacet), N-(2,6-difluoro-phenyl)-5-methyl-1,2,4-triazolo[1,5-a]-pyrimidine-2-sulphonamide (flumetsulam),

5 pentyl [2-chloro-4-fluoro-5-(1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)-phenoxy]-acetate (flumiclorac-pentyl), 2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propinyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3-dione (flumioxazin), 2-[4-chloro-2-fluoro-5-[(1-methyl-2-propinyl)-oxy]-phenyl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione (flumipropyn), ethoxycarbonylmethyl 5-(2-chloro-4-tri-

10 fluoromethyl-phenoxy)-2-nitro-benzoate (fluoroglycofen-ethyl), 1-(4-chloro-3-(2,2,3,3,3-pentafluoro-propoxymethyl)-phenyl)-5-phenyl-1H-1,2,4-triazole-3-carboxamide (flupoxam), 1-isopropyl-2-chloro-5-(3,6-dihydro-3-methyl-2,6-dioxo-4-trifluoromethyl-1(2H)-pyrimidin-2-yl)-N'-(3-methoxycarbonyl-6-trifluoromethyl-pyridin-2-yl-sulphonyl)-urea sodium

15 salt (flupyr-sulfuron-methyl-sodium), 9-hydroxy-9H-fluorene-9-carboxylic acid (flurenol), (4-amino-3,5-dichloro-6-fluoro-pyridin-2-yl-oxy)-acetic acid (2-butoxy-1-methyl-ethyl ester, 1-methyl-heptyl ester) (fluroxypyr, -butoxypropyl, -meptyl), 5-methylamino-2-phenyl-4-(3-trifluoromethyl-phenyl)-3(2H)-furanone (flurtamone), methyl [(2-chloro-4-fluoro-5-(tetrahydro-3-oxo-1H,3H-[1,3,4]-thiadiazolo-[3,4-a]-pyridazin-1-yliden)-amino)-phenyl]-thio-acetate (fluthiacet-methyl), 5-(2-chloro-4-tri-

20 trifluoromethyl-phenoxy)-N-methylsulphonyl-2-nitro-benzamide (fomesafen), 2-amino-4-(hydroxymethylphosphinyl)-butanoic acid (ammonium salt) (glufosinate-(ammonium)), N-phosphonomethyl-glycine (isopropylammonium) (glyphosate, isopropylammonium), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(3-chloro-4-methoxy-

25 carbonyl-1-methyl-pyrazol-5-yl-sulphonyl)-urea (halosulfuron-methyl), (R)-2-[4-(3-chloro-5-trifluoromethyl-pyridin-2-yl-oxy)-phenoxy]-propanoic acid (methyl ester, 2-ethoxy-ethyl ester, butyl ester) (haloxyfop, -methyl, -P-methyl, -ethoxyethyl, -butyl), 3-cyclohexyl-6-dimethylamino-1-methyl-1,3,5-triazine-2,4(1H,3H)-dione (hexazinone), methyl 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-

30 4-methyl-benzoate (imazamethabenz-methyl), 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-5-methyl-pyridine-3-carboxylic acid (imazamethapyr), 2-

(4,5-dihydro-4-methyl-4-i-propyl-5-oxo-1H-imidazol-2-yl)-3-pyridine-carboxylic acid (imazapyr), 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-5-methoxymethyl-pyridine-3-carboxylic acid (imazamox), 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-quinoline-3-carboxylic acid (imazaquin), 2-(4,5-dihydro-4-methyl-4-i-propyl-5-oxo-1H-imidazol-2-yl)-5-ethyl-pyridine-3-carboxylic acid (imazethapyr), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-chloro-imidazo[1,2-a]-pyridin-3-yl-sulphonyl)-urea (imazosulfuron), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(5-iodo-2-methoxycarbonyl-phenylsulphonyl)-urea sodium salt (iodo-sulfuron-methyl-sodium), 4-hydroxy-3,5-diiodo-benzonitrile (ioxynil), N,N-dimethyl-N'-(4-isopropyl-phenyl)-urea (isoproturon), N-(3-(1-ethyl-1-methyl-propyl)-isoxazol-5-yl)-2,6-dimethoxy-benzamide (isoxaben), (4-chloro-2-methylsulphonyl-phenyl)-(5-cyclopropyl-isoxazol-4-yl)-methanone (isoxachlortole), (5-cyclopropyl-isoxazol-4-yl)-(2-methylsulphonyl-4-trifluoromethyl-phenyl)-methanone (isoxa-flutole), 2-[2-[4-[(3,5-dichloro-2-pyridinyl)-oxy]-phenoxy]-1-oxo-propyl]-isoxazol-15 idine (isoxapyrifop), (2-ethoxy-1-methyl-2-oxo-ethyl)-5-(2-chloro-4-trifluoromethyl-phenoxy)-2-nitro-benzoate (lactofen), N'-(3,4-dichloro-phenyl)-N-methoxy-N-methyl-urea (linuron), (4-chloro-2-methyl-phenoxy)-acetic acid (MCPA), 2-(4-chloro-2-methyl-phenoxy)-propionic acid (mecoprop), 2-(2-benzothiazolyloxy)-N-methyl-N-phenyl-acetamide (mefenacet), 2-(4-methylsulphonyl-2-nitro-benzoyl)-20 1,3-cyclohexanedione (mesotrione), 4-amino-3-methyl-6-phenyl-1,2,4-triazin-5(4H)-one (metamitron), 2-chloro-N-(2,6-dimethyl-phenyl)-N-(1H-pyrazol-1-yl-methyl)-acetamide (metazachlor), N'-(4-(3,4-dihydro-2-methoxy-2,4,4-trimethyl-2H-1-benzopyran-7-yl-oxy)-phenyl)-N-methoxy-N-methyl-urea (metobenzuron), N'-(4-bromophenyl)-N-methoxy-N-methyl urea (metobromuron), (S)-2-chloro-N-(2-ethyl-25 6-methyl-phenyl)-N-(2-methoxy-1-methyl-ethyl)-acetamide (metolachlor, S-metolachlor), N-(2,6-dichloro-3-methyl-phenyl)-5,7-dimethoxy-1,2,4-triazolo[1,5-a]-pyrimidine-2-sulphonamide (metosulam), N'-(3-chloro-4-methoxy-phenyl)-N,N-dimethyl-urea (metoxuron), 4-amino-6-tert-butyl-3-methylthio-1,2,4-triazin-5(4H)-one (metribuzin), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(2-methoxycarbonyl-phenylsulphonyl)-urea (metsulfuron-methyl), S-ethyl-hexahydro-1H-azepine-1-30 carbothioate (molinate), 2-(2-naphthyloxy)-N-phenyl-propanamide (naproanilide), N-

butyl-N'-(3,4-dichloro-phenyl)-N-methyl-urea (neburon), N-(4,6-dimethoxy-
 pyrimidin-2-yl)-N'-(3-dimethylcarbamoyl-pyridin-2-yl-sulphonyl)-urea (nicosulf-
 uron), S-(2-chloro-benzyl)-N,N-diethyl-thiocarbamate (orbencarb), 4-dipropylamino-
 3,5-dinitro-benzenesulphonamide (oryzalin), 3-[2,4-dichloro-5-(2-propinyloxy)-
 5 5 phenyl]-5-(t-butyl)-1,3,4-oxadiazol-2(3H)-one (oxadiargyl), 3-[2,4-dichloro-5-(1-
 methyl-ethoxy)-phenyl]-5-(t-butyl)-1,3,4-oxadiazol-2(3H)-one (oxadiazon), N-(4,6-
 dimethyl-pyrimidin-2-yl)-N'-(2-oxetan-3-yl-oxycarbonyl-phenylsulphonyl)-urea (oxa-
 sulfuron), 3-[1-(3,5-dichlorophenyl)-1-i-propyl]-2,3-dihydro-6-methyl-5-phenyl-4H-
 1,3-oxazin-4-one (oxaziclomefone), 2-chloro-1-(3-ethoxy-4-nitro-phenoxy)-4-tri-
 10 fluoromethylbenzene (oxyfluorfen), 1,1'-dimethyl-4,4'-bipyridinium (paraquat), 1-
 amino-N-(1-ethyl-propyl)-3,4-dimethyl-2,6-dinitro-benzene (pendimethalin), 4-(t-
 butyl)-N-(1-ethyl-propyl)-2,6-dinitro-benzenamine (pendralin), 4-amino-3,5,6-tri-
 chloro-pyridine-2-carboxylic acid (picloram), 2-chloro-N-(2,6-diethyl-phenyl)-N-(2-
 propoxy-ethyl)-acetamide (pretilachlor), N-(4-fluoro-phenyl)-6-(3-trifluoromethyl-
 15 phenoxy)-pyridine-2-carboxamide (picolinafen), N-(4,6-bisdifluoromethoxy-pyri-
 midin-2-yl)-N'-(2-methoxycarbonyl-phenylsulphonyl)-urea (primisulfuron-methyl),
 2-chloro-N-isopropyl-N-phenyl-acetamide (propachlor), N-(3,4-dichloro-phenyl)-
 propanamide (propanil), 2-chloro-N-(2-ethyl-6-methyl-phenyl)-N-[(1-methyl-
 ethoxy)-methyl]-acetamide (propisochlor), S-phenylmethyl N,N-dipropyl-thiocarb-
 20 amate (prosulfocarb), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(2-(3,3,3-tri-
 fluoro-propyl)-phenylsulphonyl)-urea (prosulfuron), ethyl [2-chloro-5-(4-chloro-5-di-
 fluoromethoxy-1-methyl-1H-pyrazol-3-yl)-4-fluoro-phenoxy]-acetate (pyraflufen-
 ethyl), 4-(2,4-dichloro-benzoyl)-1,3-dimethyl-5-(4-methyl-phenylsulphonyloxy)-
 pyrazole (pyrazolate), 4-(2,4-dichloro-benzoyl)-1,3-dimethyl-5-(phenylcarbonyl-
 25 methoxy)-pyrazole (pyrazoxyfen), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(4-ethoxy-
 carbonyl-1-methyl-pyrazol-5-yl-sulphonyl)-urea (pyrazosulfuron-ethyl), O-[2,6-bis-
 (4,6-dimethoxy-pyrimidin-2-yl-oxy)-benzoyl] diphenylmethanone-oxime (pyribenz-
 oxim), 6-chloro-3-phenyl-4-pyridazinol (pyridafol), O-(6-chloro-3-phenyl-pyridazin-
 4-yl) S-octyl thiocarbonate (pyridate), 6-chloro-3-phenylpyridazin-4-ol (pyridatol),
 30 methyl 2-(4,6-dimethoxy-pyrimidin-2-yl-oxy)-benzoate (pyriminobac-methyl),
 2-chloro-6-(4,6-dimethoxy-pyrimidin-2-ylthio)-benzoic acid sodium salt (pyrithio-

bac-sodium), 7-chloro-3-methyl-quinoline-8-carboxylic acid (quinmerac), 2-[4-
 (6-chloro-2-quinoxalinyloxy)-phenoxy]-propanoic acid (ethyl ester, tetrahydro-2-
 furanyl-methyl ester) (quizalofop, -ethyl, -P-ethyl, -P-tefuryl), N-(4,6-dimethoxy-
 pyrimidin-2-yl)-N'-(3-ethylsulphonyl-pyridin-2-yl-sulphonyl)-urea (rimsulfuron), 2-
 5 (1-ethoximinobutyl)-5-(2-ethylthiopropyl)-3-hydroxy-2-cyclohexen-1-one (sethoxy-
 dim), 6-chloro-2,4-bis-ethylamino-1,3,5-triazine (simazin), 2-(2-chloro-4-methyl-
 sulphonyl-benzoyl)-cyclohexane-1,3-dione (sulcotrione), 2-(2,4-dichloro-5-methyl-
 sulphonylamino-phenyl)-4-difluoromethyl-5-methyl-2,4-dihydro-3H-1,2,4-triazol-3-
 one (sulfentrazone), N-phosphonomethyl-glycine-trimethylsulphonium (sulfosate),
 10 N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-ethylsulphonyl)-imidazo[1,2-a]pyridine-3-
 sulphonamide (sulfosulfuron), 6-chloro-4-ethylamino-2-tert-butylamino-1,3,5-
 triazine (terbuthylazine), 2-tert-butylamino-4-ethylamino-6-methylthio-1,3,5-triazine
 (terbutryn), 2-chloro-N-(2,6-dimethyl-phenyl)-N-(3-methoxy-2-thienyl-methyl)-acet-
 amide (thenylchlor), methyl 2-difluoromethyl-5-(4,5-dihydro-thiazol-2-yl)-4-(2-
 15 methyl-propyl)-6-trifluoromethyl-pyridine-3-carboxylate (thiazopyr), 6-(6,7-dihydro-
 6,6-dimethyl-3H,5H-pyrrolo[2,1-c]-1,2,4-thiadiazol-3-ylideneamino)-7-fluoro-4-(2-
 propinyl)-2H-1,4-benzoxazin-3(4H)-one (thidiazimin), N-(4-methoxy-6-methyl-
 1,3,5-triazin-2-yl)-N'-(2-methoxy-carbonyl-thien-3-yl-sulphonyl)-urea (thifensulf-
 uron-methyl), 2-(ethoximino-propyl)-3-hydroxy-5-(2,4,6-trimethyl-phenyl)-2-cyclo-
 20 hexen-1-one (tralkoxydim), S-(2,3,3-trichloro-2-propenyl) diisopropylcarbamothioate
 (triallate), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-[2-(2-chloro-ethoxy)-
 phenylsulphonyl]-urea (triasulfuron), N-methyl-N-(4-methoxy-6-methyl-1,3,5-
 triazin-2-yl)-N'-(2-methoxycarbonyl-phenylsulphonyl)-urea (tribenuron-methyl),
 (3,5,6-trichloro)-pyridin-2-yl-oxy-acetic acid (triclopyr), 2-(3,5-dichloro-phenyl)-2-
 25 (2,2,2-trichloro-ethyl)-oxirane (tridiphane), 1-amino-2,6-dinitro-N,N-dipropyl-4-tri-
 fluoromethyl-benzene (trifluralin), N-[4-dimethylamino-6-(2,2,2-trifluoro-ethoxy)-
 1,3,5-triazin-2-yl]-N'-(2-methoxycarbonyl-phenylsulphonyl)-urea (triflusulfuron-
 methyl), N-(4-methoxy-6-trifluoromethoxy-1,3,5-triazin-2-yl)-N'-(2-trifluoromethyl-
 phenylsulphonyl)-urea (tritosulfuron), 2-pyridinesulphonamide, N-[[4,6-dimethoxy-
 30 2-pyrimidinyl)amino]carbonyl]-3-[methyl(methylsulphonyl)amino]

(WO-A-92/10660), 2-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]amino]-sulphonyl]-4-[[[(methylsulphonyl)amino]methyl]-methyl benzoate (DE-A 43 35 297)

("Active compounds of group 2")

5

and also, if appropriate,

(c) at least one crop-plant-compatibility-improving compound from the following group of compounds:

10

α -(1,3-Dioxolan-2-yl-methoximino)-phenylacetonitrile (oxabetrinil), α -(cyano-methoximino)-phenylacetonitrile (cyometrinil), 4-chloro-N-(1,3-dioxolan-2-yl-methoxy)- α -trifluoro-acetophenoneoxime (fluxofenim), 4,6-dichloro-2-phenyl-pyrimidine (fencloirim), 4-dichloroacetyl-3,4-dihydro-3-methyl-2H-1,4-benzoxazine (benoxacor),
15 1-methyl-hexyl 5-chloro-quinoxalin-8-oxy-acetate (cloquintocet), 2,2-dichloro-N-(2-oxo-2-(2-propenylamino)-ethyl)-N-(2-propenyl)-acetamide (DKA-24), 1,8-naphthalic anhydride, ethyl 1-(2,4-dichloro-phenyl)-5-trichloromethyl-1H-1,2,4-triazole-3-carboxylate (fenchlorazol-ethyl), phenylmethyl 2-chloro-4-trifluoromethyl-thiazole-5-carboxylate (flurazole), 3-dichloroacetyl-5-(2-furanyl)-2,2-dimethyl-oxazolidine
20 (furilazole, MON-13900), 4-dichloroacetyl-1-oxa-4-aza-spiro[4.5]-decane (AD-67), 2-dichloromethyl-2-methyl-1,3-dioxolane (MG-191), 2,2-dichloro-N-(1,3-dioxolan-2-yl-methyl)-N-(2-propenyl)-acetamide (PPG-1292), 2,2-dichloro-N,N-di-2-propenyl-acetamide (dichlormid), N-(4-methyl-phenyl)-N'-(1-methyl-1-phenyl-ethyl)-urea (dymron), 1-dichloroacetyl-hexahydro-3,3,8a-trimethylpyrrolo[1,2-a]-pyrimidin-6(2H)-one (BAS-145138), N-(2-methoxy-benzoyl)-4-(methylamino-carbonylamino)-benzenesulphonamide, ethyl 4,5-dihydro-5,5-diphenyl-3-isoxazolecarboxylate (isoxadifen-ethyl), diethyl 1-(2,4-dichlorophenyl)-4,5-dihydro-5-methyl-1H-pyrazole-3,5-dicarboxylate (mefenpyr-diethyl) and 2,4-dichlorophenoxyacetic acid (2,4-D) and its derivatives.

30

("Active compounds of group 3").

Preferred substituents of the radicals listed in the formula (I) shown above are illustrated below.

- 5 R¹ preferably represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl.
- R² preferably represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl.
- 10 R³ preferably represents hydrogen, fluorine, chlorine or bromine.
- R⁴ preferably represents cyano, thiocarbamoyl, fluorine, chlorine or bromine.
- 15 R⁵ preferably represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, hydroxyl, mercapto, amino, hydroxyamino, aminosulphonyl, fluorine, chlorine, bromine, represents in each case optionally cyano-, hydroxyl-, methoxy-, ethoxy-, acetyl-, propionyl-, methoxycarbonyl- and/or ethoxycarbonyl-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl, methoxy, ethoxy, n- or i-propoxy, n-, i-, s- or t-butoxy, methylthio, ethylthio, n- or i-propylthio, n-, i-, s- or t-butylthio, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, acetyl, propionyl, n- or i-butyryl, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl, methylamino, ethylamino, n- or i-propylamino, n-, i-, s- or t-butylamino, represents in each case optionally cyano-, carboxyl-, fluorine-, chlorine-, bromine-, methoxycarbonyl- and/or ethoxycarbonyl-substituted ethenyl, propenyl, butenyl, ethinyl, propinyl, butinyl, propenyloxy, butenyloxy, propinyloxy or butinyloxy, represents in each case optionally fluorine- and/or chlorine-substituted acetyl- amino, propionylamino, methoxycarbonylamino, ethoxycarbonylamino, methylsulphonylamino, ethylsulphonylamino, n- or i-propylsulphonylamino, n-, i-, s- or t-butylsulphonylamino, N,N-bis-methylsulphonyl-amino, N,N-bis-
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- 25
- 30

ethylsulphonyl-amino, N-ethylsulphonyl-N-methylsulphonyl-amino, N-acetyl-N-methylsulphonyl-amino, N-propionyl-N-methylsulphonyl-amino, N-n-butyroyl-N-methylsulphonyl-amino, N-i-butyroyl-N-methylsulphonyl-amino, N-s-butyroyl-N-methylsulphonyl-amino, N-pivaloyl-N-methylsulphonyl-amino, N-acetyl-N-ethylsulphonyl-amino, N-propionyl-N-ethylsulphonyl-amino, N-n-butyroyl-N-ethylsulphonyl-amino, N-i-butyroyl-N-ethylsulphonyl-amino, N-s-butyroyl-N-ethylsulphonyl-amino, N-pivaloyl-N-ethylsulphonyl-amino, or represents in each case optionally cyano-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s- or t-butyl-, trifluoromethyl-, methoxy-, ethoxy-, n- or i-propoxy-, difluoromethoxy- or trifluoromethoxy-substituted N-phenylcarbonyl-N-methylsulphonyl-amino, N-phenylcarbonyl-N-ethylsulphonyl-amino, N-thienylcarbonyl-N-methylsulphonyl-amino or N-thienylcarbonyl-N-ethylsulphonyl-amino.

R^1 particularly preferably represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl.

R^2 particularly preferably represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl.

R^3 particularly preferably represents hydrogen, fluorine or chlorine.

R^4 particularly represents cyano or thiocarbamoyl.

R^5 particularly preferably represents nitro, cyano, carboxyl, carbamoyl, thio-carbamoyl, hydroxyl, mercapto, amino, hydroxyamino, aminosulphonyl, fluorine, chlorine, bromine, represents in each case optionally cyano-, hydroxyl-, methoxy-, ethoxy-, acetyl-, propionyl-, methoxycarbonyl- and/or ethoxycarbonyl-substituted methyl, ethyl, n- or i-propyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, acetyl, propionyl, n- or i-

butyroyl, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl, methyl-amino, ethylamino, n- or i-propylamino, represents in each case optionally cyano-, carboxyl-, fluorine-, chlorine-, bromine-, methoxycarbonyl- and/or ethoxycarbonyl-substituted ethenyl, propenyl, ethinyl, propinyl, propenyloxy or propinyloxy, represents in each case optionally fluorine- and/or chlorine-substituted acetylamino, propionylamino, methoxycarbonylamino, ethoxycarbonylamino, methylsulphonylamino, ethylsulphonylamino, n- or i-propylsulphonylamino, N,N-bis-methylsulphonyl-amino, N,N-bis-ethylsulphonyl-amino, N-ethylsulphonyl-N-methylsulphonyl-amino, N-acetyl-N-methylsulphonyl-amino, N-propionyl-N-methylsulphonyl-amino, N-n-butyroyl-N-methylsulphonyl-amino, N-i-butyroyl-N-methylsulphonyl-amino, N-s-butyroyl-N-methylsulphonyl-amino, N-pivaloyl-N-methylsulphonyl-amino, N-acetyl-N-ethylsulphonyl-amino, N-propionyl-N-ethylsulphonyl-amino, N-n-butyroyl-N-ethylsulphonyl-amino, N-i-butyroyl-N-ethylsulphonyl-amino, N-s-butyroyl-N-ethylsulphonyl-amino, N-pivaloyl-N-ethylsulphonyl-amino, or represents in each case optionally cyano-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, trifluoromethyl-, methoxy-, ethoxy-, difluoromethoxy- or trifluoromethoxy-substituted N-phenylcarbonyl-N-methylsulphonyl-amino, N-phenylcarbonyl-N-ethylsulphonyl-amino, N-thienylcarbonyl-N-methylsulphonyl-amino or N-thienylcarbonyl-N-ethylsulphonyl-amino.

Examples of the compounds of the formula (I) to be used as mixing partners according to the invention which may be mentioned are:

2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-

triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one.

The compound 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one (I-1) - according to Chem. Abstracts also to be referred to as 4-[4,5-dihydro-4-methyl-5-oxo-(3-trifluoromethyl)-1H-1,2,4-triazol-1-yl]-2-[(ethylsulphonyl)amino]-5-fluoro-benzenecarbothioamide (CAS Reg. No.: 173980-17-1) - may be particularly emphasised as mixing component of the formula (I).

The compounds 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one (I-2) - according to Chem. Abstracts also to be referred to as N-[2-cyano-5-[4,5-dihydro-4-methyl-5-oxo-3-trifluoromethyl-1H-1,2,4-triazol-1-yl]-4-fluoro-phenyl]-ethanesulphonamide (CAS Reg. No.: 157739-55-4) - and 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one (I-3) - according to

Chem. Abstracts also to be referred to as N-[2-cyano-5-[4-ethyl-4,5-dihydro-5-oxo-3-trifluoromethyl-1H-1,2,4-triazol-1-yl]-4-fluoro-phenyl]-ethanesulphonamide (CAS Reg. No.: 157739-37-2) - and 2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one (I-4) - according to
 5 Chem. Abstracts also to be referred to as N-[2-cyano-5-[3-difluoromethyl-4,5-dihydro-4-methyl-5-thioxo-1H-1,2,4-triazol-1-yl]-4-fluoro-phenyl]-methanesulphonamide (CAS Reg. No.: 157739-46-3) - may furthermore be particularly emphasised as possible mixing components of the formula (I).

10 The compounds of the formula (I) are described in the patent applications or patents mentioned above for the N-aryl-triazolin(ethi)ones.

According to their chemical structure, the active compounds of group 2 can be assigned to the following classes of active compounds:

15 Amides (for example isoxaben, propanil), arylheterocycles (for example azafenidin, carfentrazone-ethyl, cinidon-ethyl, fluazolate, flumiclorac-pentyl, flumioxazin, fluthi-acet-methyl, oxadiazon, oxadiargyl, pyraflufen-ethyl, pyridate, pyridafol, sulfentrazone, thidiazimin), aryloxyphenoxypropionates (for example clodinafop-propargyl,
 20 cyhalofop-butyl, diclofop-methyl, fenoxaprop-P-ethyl, fluazifop-P-butyl, haloxyfop-R-methyl, quizalofop-P-ethyl), carboxylic acid derivatives (for example clopyralid, dicamba, fluroxypyr, picloram, triclopyr), benzothiadiazoles (for example bentazone), chloroacetamides (for example acetochlor, alachlor, butachlor, dimethenamid, metazachlor, metolachlor, pretilachlor, propachlor, propisochlor), cyclohexane-
 25 diones (for example butroxydim, clefoxydim, cycloxydim, sethoxydim, tralkoxydim), dinitroanilines (for example benfluralin, ethalfluralin, oryzalin, pendimethalin, trifluralin), diphenyl ethers (for example acifluorfen-sodium, aclonifen, bifenox, fluoroglycofen-ethyl, fomesafen, lactofen, oxyfluorfen), ureas (for example chlortoluron, diuron, isoproturon, linuron, metobromuron, metoxuron), imidazolinones (for
 30 example imazamethabenz-methyl, imazamox, imazaquin, imazethapyr), isoxazoles (for example isoxaflutole), nicotinanilides (for example diflufenican), nitriles (for

example bromoxynil, ioxynil), organophosphorus compounds (for example glufosinate, glyphosate, sulfosate), oxyacetamides (for example flufenacet, mefenacet), phenoxycarboxylic acid derivatives (for example 2,4-D, dichlorprop, MCPA, MCPB, mecoprop), pyrazoles (for example pyrazolate, pyrazoxyfen), pyridines (for example dithiopyr, thiazopyr), pyrimidinyl(thio)benzoates (for example bispyribac, pyribenzoxim, pyriethion, pyriminobac), sulphonylureas (for example amidosulfuron, azimsulfuron, bensulfuron-methyl, chlorimuron-ethyl, chlorsulfuron, cinosulfuron, cyclosulfamuron, ethoxysulfuron, flupyr-sulfuron-methyl-sodium, halo-sulfuron-methyl, imazosulfuron, metsulfuron-methyl, nicosulfuron, oxasulfuron, primisulfuron-methyl, prosulfuron, pyrazosulfuron-ethyl, rimsulfuron, sulfosulfuron, thifensulfuron-methyl, triasulfuron, tribenuron-methyl, triflurosulfuron-methyl), tetrazolinones (for example fentrazamide), thiocarbamates (for example butylate, dimepiperate, EPTC, esprocarb, molinate, orbencarb, prosulfocarb, triallate), triazoles (for example amitrole), triazolopyrimidines (for example cloransulam-methyl, diclosulam, florasulam, flumetsulam, metosulam), triazines (for example ametryn, atrazine, cyanazine, simazine, terbuthylazine, terbutryn), triazinones (for example hexazinone, metamitron, metribuzin), triketones (for example mesotrione, sulcotrione).

From the active compounds of group 2, the following compounds are particularly emphasised as mixing components:

Atrazine, bromoxynil, chlorimuron-ethyl, clodinafop-propargyl, dicamba, dichlorprop-P, diflufenican, dimethenamid, fenoxaprop-(P)-ethyl, fentrazamide, flufenacet, flupyr-sulfuron-methyl-sodium, flurtamone, glufosinate-ammonium, glyphosate-isopropylammonium, imazamethapyr, imazamox, iodosulfuron-methyl-sodium, mesotrione, metolachlor, metosulam, metribuzin, metsulfuron-methyl, nicosulfuron, rimsulfuron, sulcotrione, sulfosate, sulfosulfuron, terbuthylazine, thifensulfuron-methyl, tralkoxydim, tribenuron-methyl.

According to their chemical structure, the particularly emphasised active compounds of group 2 can be assigned to the following classes of active compounds:

5 Aryloxyphenoxypropionates (for example clodinafop-propargyl, fenoxaprop-P-ethyl),
 carboxylic acid derivatives (for example dicamba, fluroxypyr), chloroacetamides (for
 example dimethenamid, metolachlor), cyclohexanediones (for example tralkoxydim),
 ureas (for example isoproturon), imidazolinones (for example imazamethabenz-
 methyl, imazamox), nicotineanilides (for example diflufenican), nitriles (for example
 bromoxynil), organophosphorus compounds (for example glufosinate, glyphosate,
 10 sulfosate), oxyacetamides (for example flufenacet), phenoxy-carboxylic acid
 derivatives (for example dichlorprop-P), sulphonylureas (for example chlorimuron-
 ethyl, flupyr-sulfuron-methyl-sodium, metsulfuron-methyl, nicosulfuron, sulfo-
 sulfuron, thifensulfuron-methyl, tribenuron-methyl), triazolopyrimidines (for
 example florasulam, metosulam), triazines (for example ametryn, atrazine, terbuthyl-
 15 azine), triazinones (for example metribuzin), triketones (for example mesotrione,
 sulcotrione).

The compositions according to the invention preferably comprise one to three active
 20 compounds of group 2.

Surprisingly, it has now been found that the active compound combinations defined
 above of N-aryl-triazolin(ethi)ones of the formula (I) and the abovementioned active
 compounds of group 2, in addition to being very well tolerated by useful plants, have
 particularly high herbicidal activity and can be used in a variety of crops, in particular
 25 in barley, maize, rice and wheat, for the selective control of weeds.

Surprisingly, the herbicidal activity of the active compound combinations according
 to the invention of compounds of the abovementioned groups 1 and 2 is considerably
 higher than the sum of the effects of the individual active compounds.

This means that there is not only a complementary action but also an unforeseeable synergistic effect. The novel active compound combinations are tolerated well by a large number of crops, and the novel active compound combinations also effectively control weeds which are otherwise difficult to control. The novel active compound combinations are therefore a valuable addition to the selective herbicides.

The synergistic effect of the active compound combinations according to the invention is particularly pronounced at certain concentration ratios. However, the ratios by weight of the active compounds in the active compound combinations can be varied within relatively wide ranges. In general, from 0.01 to 1000 parts by weight, preferably from 0.02 to 500 parts by weight and particularly preferably from 0.05 to 100 parts by weight of active compound of group 2 are present per part by weight of the active compound of the formula (I).

Mixing components from the active compounds of group 3 which may be particularly emphasised are:

1-methylhexyl 5-chloro-quinoxalin-8-oxy-acetate (cloquintocet), ethyl 1-(2,4-dichloro-phenyl)-5-trichloromethyl-1H-1,2,4-triazole-3-carboxylate (fenchlorazol-ethyl), ethyl 4,5-dihydro-5,5-diphenyl-3-isoxazolecarboxylate (isoxadifen-ethyl), diethyl 1-(2,4-dichlorophenyl)-4,5-dihydro-5-methyl-1H-pyrazole-3,5-dicarboxylate (mefenpyr-diethyl) and 2,4-dichlorophenoxyacetic acid (2,4-D) and its derivatives.

Surprisingly, it has been found that the active compound combinations defined above of N-aryl-triazolin(ethi)ones of the formula (I) or their salts and a safener/antidote ("active compounds of group 3") in combination with one or more of the active compounds of group 2 listed above, in addition to being very well tolerated by useful plants, have particularly high herbicidal activity and can be used in a variety of crops, in particular in barley, maize, rice and wheat, for the selective control of weeds.

Surprisingly, it has additionally been found that even the herbicidally active substance 2,4-dichlorophenoxy-acetic acid (2,4-D) and its derivatives can assume the safener role described above.

5 A particular embodiment is therefore also a mixture comprising a compound of the formula (I) and/or salts thereof on the one hand and 2,4-D and/or its derivatives on the other hand, if appropriate in combination with one or more of the abovementioned active compounds of group 2. Typical derivatives of 2,4-D are, for example, its esters.

10 The compounds diethyl 1-(2,4-dichlorophenyl)-4,5-dihydro-5-methyl-1H-pyrazole-3,5-dicarboxylate (mefenpyr-diethyl), 1-methylhexyl [(5-chloro-8-quinolinyl)oxy]acetate (cloquintocet-mexyl) and ethyl 1-(2,4-dichlorophenyl)-5-(trichloromethyl)-1H-1,2,4-triazole-3-carboxylate (fenchlorazole-ethyl) are described in the following patent applications: DE-A-39 39 503, EP-A-191 736 and DE-A-35 25 205, respectively.

15 2,4-D is a known herbicide.

Here it is surprising that, from a large number of known safeners or antidotes capable of antagonising the damaging effect of a herbicide on the crop plants, it is specifically the active compounds of group 3 listed above which neutralise the damaging effect of compounds of the formula (I) and their salts, if appropriate in combination with one or more of the active compounds of group 2 listed above, on the crop plants virtually completely without adversely affecting the herbicidal activity against the weeds.

25 The particularly advantageous effect of the particularly preferred combination
partners of group 3, in particular with respect to sparing cereal plants, such as, for
example, wheat, barley and rye, may be emphasised here.

The advantageous effect of the crop plant compatibility of the active compound combinations according to the invention is likewise particularly strongly pronounced at 30 certain concentration ratios. However, the ratios by weight of the active compounds in the active compound combinations can be varied within relatively wide ranges. In

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The active compound combinations according to the invention can be used, for example, in connection with the following plants:

- 5 Dicotyledonous weeds of the genera: Sinapis, Lepidium, Galium, Stellaria, Matricaria, Anthemis, Galinsoga, Chenopodium, Urtica, Senecio, Amaranthus, Portulaca, Xanthium, Convolvulus, Ipomoea, Polygonum, Sesbania, Ambrosia, Cirsium, Carduus, Sonchus, Solanum, Rorippa, Rotala, Lindernia, Lamium, Veronica, Abutilon, Emex, Datura, Viola, Galeopsis, Papaver, Centaurea, Trifolium, Ranunculus and Taraxacum.
- 10 Dicotyledonous crops of the genera: Gossypium, Glycine, Beta, Daucus, Phaseolus, Pisum, Solanum, Linum, Ipomoea, Vicia, Nicotiana, Lycopersicon, Arachis, Brassica, Lactuca, Cucumis and Cucurbita.
- 15 Monocotyledonous weeds of the genera: Echinochloa, Setaria, Panicum, Digitaria, Phleum, Poa, Festuca, Eleusine, Brachiaria, Lolium, Bromus, Avena, Cyperus, Sorghum, Agropyron, Cynodon, Monochoria, Fimbristylis, Sagittaria, Eleocharis, Scirpus, Paspalum, Ischaemum, Sphenoclea, Dactyloctenium, Agrostis, Alopecurus, Apera and Phalaris.
- 20 Monocotyledonous crops of the genera: Oryza, Zea, Triticum, Hordeum, Avena, Secale, Sorghum, Panicum, Saccharum, Ananas, Asparagus and Allium.

25 However, the use of the active compound combinations according to the invention is in no way restricted to these genera, but also extends in the same manner to other plants.

30 The active compound combinations can be converted into the customary formulations, such as solutions, emulsions, wettable powders, suspensions, powders, dusts, pastes, soluble powders, granules, suspo-emulsion concentrates, natural and synthetic substances impregnated with active compound, and very fine capsules in polymeric substances.

35 These formulations are produced in a known manner, for example by mixing the active compounds with extenders, that is liquid solvents and/or solid carriers, optionally with the use of surface-active agents, that is emulsifying agents and/or dispersing agents and/or foam-forming agents.

If the extender used is water it is also possible to use, for example, organic solvents as auxiliary solvents. Suitable liquid solvents are in the main: aromatics, such as xylene, toluene or alkyl-naphthalenes, chlorinated aromatics and chlorinated aliphatic hydrocarbons, such as chlorobenzenes, chloroethylenes or methylene chloride, aliphatic hydrocarbons, such as cyclohexane or paraffins, for example petroleum fractions, mineral and vegetable oils, alcohols, such as butanol or glycol as well as their ethers and esters, ketones, such as acetone, methyl ethyl ketone, methyl isobutyl ketone or cyclohexanone, strongly polar solvents, such as dimethylformamide and dimethyl sulphoxide, as well as water.

Suitable solid carriers are:

for example ammonium salts and ground natural minerals, such as kaolins, clays, talc, chalk, quartz, attapulgite, montmorillonite or diatomaceous earth, and ground synthetic minerals, such as finely divided silica, alumina and silicates; suitable solid carriers for granules are: for example crushed and fractionated natural rocks such as calcite, marble, pumice, sepiolite and dolomite, as well as synthetic granules of inorganic and organic meals, and granules of organic material such as sawdust, coconut shells, maize cobs and tobacco stalks; suitable emulsifying and/or foam-forming agents are: for example nonionic and anionic emulsifiers, such as polyoxyethylene fatty acid esters, polyoxyethylene fatty alcohol ethers, for example alkylaryl polyglycol ethers, alkylsulphonates, alkylsulphates, arylsulphonates as well as protein hydrolysates; suitable dispersing agents are: for example lignin-sulphite waste liquors and methylcellulose.

Tackifiers such as carboxymethylcellulose and natural and synthetic polymers in the form of powders, granules or latexes, such as gum arabic, polyvinyl alcohol and polyvinyl acetate, as well as natural phospholipids, such as cephalins and lecithins, and synthetic phospholipids, can be used in the formulations. Other possible additives are mineral and vegetable oils.

It is possible to use colorants such as inorganic pigments, for example iron oxide, titanium oxide and Prussian Blue, and organic dyestuffs, such as alizarin dyestuffs, azo dyestuffs and metal phthalocyanine dyestuffs, and trace nutrients such as salts of iron, manganese, boron, copper, cobalt, molybdenum and zinc.

The formulations in general comprise between 0.1 and 95 per cent by weight, preferably between 0.5 and 90%, of active compounds.

5 In general, the active compound combinations according to the invention are applied in the form of ready mixes. However, the active compounds which the active compound combinations comprise can also be formulated individually and mixed upon use, i.e. applied in the form of tank mixes.

10 The novel active compound combinations can be used as such or in the form of their formulations, and furthermore also as mixtures with other known herbicides, ready mixes or tank mixes again being possible. They may also be mixed with other known active compounds, such as fungicides, insecticides, acaricides, nematicides, bird repellents, growth substances, plant nutrients and agents which improve soil structure. For particular application purposes, in particular when applied post-emergence, it may
15 furthermore be advantageous to incorporate, in the formulations, mineral or vegetable oils which are tolerated by plants (for example the commercial product "Oleo DuPont 11E") or ammonium salts such as, for example, ammonium sulphate or ammonium thiocyanate, as further additives.

20 The novel active compound combinations can be used as such, in the form of their formulations or in the use forms prepared therefrom by further dilution, such as ready-to-use solutions, suspensions, emulsions, powders, pastes and granules. They are used in the customary manner, for example by watering, spraying, atomising, dusting or scattering.

25 The active compound combinations according to the invention can be applied before and after the plants have emerged, that is to say pre-emergence and post-emergence. They can also be incorporated into the soil before sowing.

30 The good herbicidal activity of the novel active compound combinations can be seen from the examples which follow. While the individual active compounds show weak points regarding the herbicidal activity, the combinations, without exception, display a very good activity against weeds, which exceeds a simple additive effect.

A synergistic effect in herbicides is always present when the herbicidal activity of the active compound combination exceeds the activity of the active compounds when applied individually.

5 The expected activity for a given combination of two herbicides can be calculated as follows (cf. COLBY, S.R.: "Calculating synergistic and antagonistic responses of herbicide combinations", Weeds 15, pages 20 - 22, 1967):

If

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X = % damage by herbicide A (active compound of the formula I) at an application rate of p kg/ha

and

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Y = % damage by herbicide B (active compound of the formula II) at an application rate of q kg/ha

and

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E = the expected damage of the herbicides A and B at application rates of p and q kg/ha,

then

$$E = X + Y - (X * Y/100).$$

25

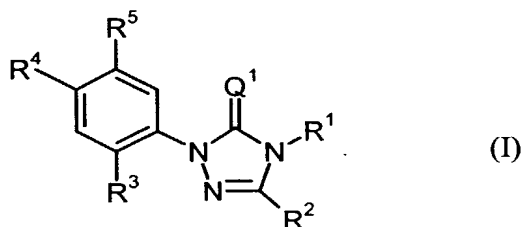
If the actual damage exceeds the calculated value, then the activity of the combination is superadditive, i.e. a synergistic effect exists.

Patent Claims

1. Composition, characterised in that it contains an effective amount of an active compound combination comprising

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- (a) at least one N-aryl-triazolin(ethi)one of the general formula (I)



in which

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Q¹ represents oxygen or sulphur,

R¹ represents optionally halogen-substituted alkyl having 1 to 5 carbon atoms,

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R² represents optionally halogen-substituted alkyl having 1 to 5 carbon atoms,

R³ represents hydrogen or halogen,

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R⁴ represents cyano, thiocarbamoyl or halogen, and

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R⁵ represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, hydroxyl, mercapto, amino, hydroxyamino, aminosulphonyl, halogen, represents in each case optionally cyano-, hydroxyl-, C₁-C₄-alkoxy-, C₁-C₄-alkylcarbonyl- and/or C₁-C₄-alkoxycarbonyl-substituted alkyl, alkoxy, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylcarbonyl, alkoxy-carbonyl or alkylamino having in each case 1 to 6 carbon atoms,

represents in each case optionally cyano-, carboxyl-, halogen- and/or C₁-C₄-alkoxycarbonyl-substituted alkenyl, alkynyl, alkenyloxy or alkynyloxy having in each case 2 to 6 carbon atoms, represents in each case optionally halogen-substituted alkylcarbonylamino, alkoxy-carbonylamino, alkylsulphonylamino, N,N-bis-alkylsulphonyl-amino or N-alkylcarbonyl-N-alkylsulphonyl-amino having in each case 1 to 6 carbon atoms in the alkyl groups, or represents in each case optionally cyano-, halogen-, C₁-C₄-alkyl-, C₁-C₄-halogenoalkyl-, C₁-C₄-alkoxy- or C₁-C₄-halogenoalkoxy-substituted N-phenylcarbonyl-N-alkylsulphonyl-amino, N-pyridylcarbonyl-N-alkylsulphonyl-amino, N-furylcarbonyl-N-alkylsulphonyl-amino or N-thienylcarbonyl-N-alkylsulphonyl-amino having in each case 1 to 6 carbon atoms in the alkyl groups,

("Active compounds of group 1")

and

(b) at least one compound from a second group of herbicides comprising the active compounds listed below:

2-chloro-N-(ethoxymethyl)-N-(2-ethyl-6-methyl-phenyl)-acetamide (aceto-chlor), 5-(2-chloro-4-trifluoromethyl-phenoxy)-2-nitro-benzoic acid sodium salt (acifluorfen-sodium), 2-chloro-6-nitro-3-phenoxy-benzenamine (aclo-nifen), 2-chloro-N-(methoxymethyl)-N-(2,6-diethyl-phenyl)-acetamide (ala-chlor), N-ethyl-N'-i-propyl-6-methylthio-1,3,5-triazine-2,4-diamine (ametryn), 4-amino-N-(1,1-dimethyl-ethyl)-4,5-dihydro-3-(1-methyl-ethyl)-5-oxo-1H-1,2,4-triazole-1-carboxamide (amicarbazone), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(N-methyl-N-methylsulphonyl-sulphamoyl)-urea (amidosulfuron), 1H-1,2,4-triazol-3-amine (amitrole), 6-chloro-4-ethylamino-2-isopropylamino-1,3,5-triazine (atrazine), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-[1-methyl-4-

(2-methyl-2H-tetrazol-5-yl)-1H-pyrazol-5-ylsulphonyl]-urea (azimsulfuron),
 2-[2,4-dichloro-5-(2-propinyloxy)-phenyl]-5,6,7,8-tetrahydro-1,2,4-triazolo-
 [4,3-a]-pyridin-3(2H)-one (azafenidin), N-benzyl-2-(4-fluoro-3-trifluoro-
 methyl-phenoxy)-butanamide (beflubutamide), 4-chloro-2-oxo-3(2H)-benzo-
 5 thiazoleacetic acid (benazolin), N-butyl-N-ethyl-2,6-dinitro-4-trifluoromethyl-
 benzenamine (benfluralin), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-methoxy-
 carbonyl-phenylmethylsulphonyl)-urea (bensulfuron), methyl 2-[2-[4-(3,6-di-
 hydro-3-methyl-2,6-dioxo-4-trifluoromethyl-1(2H)-pyrimidinyl)phenoxy]-
 methyl]-5-ethyl-phenoxy-propanoate (benzfendizone), 3-(2-chloro-4-methyl-
 10 sulphonyl-benzoyl)-4-phenylthio-bicyclo-[3.2.1]-oct-3-en-2-one (benzobicyc-
 lon), ethyl N-benzoyl-N-(3,4-dichloro-phenyl)-DL-alaninate (benzoylprop-
 ethyl), 3-i-propyl-1H-2,1,3-benzothiadiazin-4(3H)-one (bentazone), methyl 5-
 (2,4-dichloro-phenoxy)-2-nitro-benzoate (bifenox), 2,6-bis-(4,6-dimethoxy-
 pyrimidin-2-yl-oxy)-benzoic acid sodium salt (bispyribac-sodium), 2-bromo-
 15 3,3-dimethyl-N-(1-methyl-1-phenyl-ethyl)-butanamide (bromobutide), O-
 (2,4-dinitro-phenyl) 3,5-dibromo-4-hydroxy-benzaldehyde-oxime (bromofen-
 oxim), 3,5-dibromo-4-hydroxy-benzonitrile (bromoxynil), N-butoxymethyl-2-
 chloro-N-(2,6-diethyl-phenyl)-acetamide (butachlor), [1,1-dimethyl-2-oxo-2-
 (2-propenyloxy)]-ethyl 2-chloro-5-(3,6-dihydro-3-methyl-2,6-dioxo-4-
 20 trifluoromethyl-1(2H)-pyrimidinyl)-benzoate (butafenacil-allyl), 2-(1-ethox-
 imino-propyl)-3-hydroxy-5-[2,4,6-trimethyl-3-(1-oxo-butyl)-phenyl]-2-cyclo-
 hexen-1-one (butoxydim), S-ethyl bis-(2-methyl-propyl)-thiocarbamate
 (butylate), N,N-diethyl-3-(2,4,6-trimethyl-phenyl-sulphonyl)-1H-1,2,4-
 triazole-1-carboxamide (cafenstrole), 2-[1-[(3-chloro-2-propenyl)-oxy-
 25 imino]-propyl]-3-hydroxy-5-(tetrahydro-2H-pyran-4-yl)-2-cyclohexen-1-one
 (caloxydim, tepraloxydim), 2-(4-chloro-2-fluoro-5-(2-chloro-2-ethoxy-
 carbonyl-ethyl)-phenyl)-4-difluoromethyl-5-methyl-2,4-dihydro-3H-1,2,4-
 triazol-3-one (carfentrazone-ethyl), 2,4-dichloro-1-(3-methoxy-4-nitro-
 phenoxy)-benzene (chlomethoxyfen), 3-amino-2,5-dichloro-benzoic acid
 30 (chloramben), N-(4-chloro-6-methoxy-pyrimidin-2-yl)-N'-(2-ethoxycarbonyl-
 phenylsulphonyl)-urea (chlorimuron-ethyl), 1,3,5-trichloro-2-(4-nitro-

phenoxy)-benzene (chlornitrofen), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(2-chloro-phenylsulphonyl)-urea (chlorsulfuron), N'-(3-chloro-4-methyl-phenyl)-N,N-dimethyl-urea (chlortoluron), ethyl 2-chloro-3-[2-chloro-5-(1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)-phenyl]-2-propanoate (cinidon-ethyl), N-(4,6-dimethoxy-1,3,5-triazin-2-yl)-N'-(2-(2-methoxy-ethoxy)-phenylsulphonyl)-urea (cinosulfuron), 2-[1-[2-(4-chloro-phenoxy)-propoxyamino]butyl]-5-(tetrahydro-2H-thiopyran-3-yl)-1,3-cyclohexanedione (clefoxydim), (E,E)-(+)-2-[1-[(3-chloro-2-propenyl)-oxy]-imino]-propyl]-5-[2-(ethylthio)-propyl]-3-hydroxy-2-cyclohexen-1-one (clethodim), prop-2-ynyl (R)-2-[4-(5-chloro-3-fluoro-pyridin-2-yl-oxy)-phenoxy]-propanoate (clodinafop-propargyl), 3,6-dichloro-pyridine-2-carboxylic acid (clopyralid), methyl 3-chloro-2-[(5-ethoxy-7-fluoro[1,2,4]triazolo[1,5-c]pyrimidin-2-yl-sulphonyl)-amino]-benzoate (cloransulam-methyl), 2-chloro-4-ethylamino-6-(1-cyano-1-methyl-ethylamino)-1,3,5-triazine (cyanazine), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-cyclopropylcarbonyl-phenylsulphonyl)-urea (cyclo-sulfamuron), 2-(1-ethoximinobutyl)-3-hydroxy-5-(tetrahydro-2H-thiopyran-3-yl)-2-cyclohexen-1-one (cycloxydim), butyl (R)-2-[4-(4-cyano-2-fluoro-phenoxy)-phenoxy]-propanoate (cyhalofop-butyl), 2,4-dichloro-phenoxy-acetic acid (2,4-D), 3,6-dichloro-2-methoxy-benzoic acid (dicamba), (R)-2-(2,4-dichloro-phenoxy)-propanoic acid (dichlorprop-P), methyl-2-[4-(2,4-dichloro-phenoxy)-phenoxy]-propanoate (diclofop-methyl), N-(2,6-dichloro-phenyl)-5-ethoxy-7-fluoro-[1,2,4]-triazolo-[1,5-c]-pyrimidine-2-sulphonamide (diclosulam), 1,2-dimethyl-3,5-diphenyl-1H-pyrazolium methylsulphate (difenzoquat), N-(2,4-difluoro-phenyl)-2-(3-trifluoromethylphenoxy)-pyridine-3-carboxamide (diflufenican), 2-[1-[(3,5-difluoro-phenyl)-amino-carbonyl-hydrazono]-ethyl]-pyridine-3-carboxylic acid (diflufenzopyr), S-(1-methyl-1-phenyl-ethyl) 1-piperidine-carbothioate (dimepiperate), 2-chloro-N-(2,4-dimethyl-3-thienyl)-N-(2-methoxy-1-methyl-ethyl)-acetamide (dimethenamid), 2-amino-4-(1-fluoro-1-methyl-ethyl)-6-(1-methyl-2-(3,5-dimethyl-phenoxy)-ethylamino)-1,3,5-triazine (dimexyflam), N₃N₃-diethyl-2,4-dinitro-6-trifluoromethyl-1,3-diamino-benzene (dinitramine), 6,7-

dihydro-dipyrido[1,2-a:2',1'-c]pyrazindium (diquat), S,S-dimethyl 2-difluoromethyl-4-i-butyl-6-trifluoromethyl-pyridine-3,5-dicarbothioate (di-thiopyr), N'-(3,4-dichloro-phenyl)-N,N-dimethyl-urea (diuron), 2-[2-(3-chloro-phenyl)-oxiranylmethyl]-2-ethyl-1H-indene-1,3(2H)-dione (epro-podan), S-ethyl dipropylthiocarbamate (EPTC), S-(phenylmethyl) N-ethyl-N-(1,2-dimethyl-propyl)-thiocarbamate (esprocarb), N-ethyl-N-(2-methyl-2-propenyl)-2,6-dinitro-4-trifluoromethyl-benzenamine (ethalfuralin), 2-ethoxy-1-methyl-2-oxoethyl (S)-2-chloro-5-(2-chloro-4-trifluoromethyl-phenoxy)-benzoate (ethoxyfen), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-ethoxy-phenoxy-sulphonyl)-urea (ethoxysulfuron), ethyl (R)-2-[4-(6-chloro-benzoxazol-2-yl-oxy)-phenoxy]-propanoate (fenoxaprop-(P)-ethyl), 4-(2-chloro-phenyl)-N-cyclohexyl-N-ethyl-4,5-dihydro-5-oxo-1H-tetrazole-1-carboxamide (fentrazamid), isopropyl N-benzoyl-N-(3-chloro-4-fluoro-phenyl)-DL-alaninate (flamprop-isopropyl), isopropyl N-benzoyl-N-(3-chloro-4-fluoro-phenyl)-L-alaninate (flamprop-isopropyl-L), methyl N-benzoyl-N-(3-chloro-4-fluoro-phenoxy)-DL-alaninate (flamprop-methyl), N-(2,6-difluoro-phenyl)-8-fluoro-5-methoxy-[1,2,4]-triazolo-[1,5-c]-pyrimidine-2-sulphonamide (florasulam), butyl (R)-2-[4-(5-trifluoromethyl-pyridin-2-yl-oxy)-phenoxy]-propanoate (fluazifop, -butyl, -P-butyl), i-propyl 5-(4-bromo-1-methyl-5-trifluoromethyl-1H-pyrazol-3-yl)-2-chloro-4-fluoro-benzoate (fluazolate), N-(4-fluoro-phenyl)-N-i-propyl-2-(5-trifluoromethyl-1,3,4-thia-diazol-2-yl-oxy)-acetamide (flufenacet), N-(2,6-difluorophenyl)-5-methyl-1,2,4-triazolo[1,5-a]-pyrimidine-2-sulphonamide (flumetsulam), pentyl [2-chloro-4-fluoro-5-(1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)-phenoxy]-acetate (flumiclorac-pentyl), 2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propinyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3-dione (flumioxazin), 2-[4-chloro-2-fluoro-5-[(1-methyl-2-propinyl)-oxy]-phenyl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione (flumipropyn), ethoxy-carbonylmethyl 5-(2-chloro-4-trifluoromethyl-phenoxy)-2-nitro-benzoate (fluoroglycofen-ethyl), 1-(4-chloro-3-(2,2,3,3,3-pentafluoro-propoxymethyl)-phenyl)-5-phenyl-1H-1,2,4-triazole-3-carboxamide (flupoxam), 1-isopropyl-

- 2-chloro-5-(3,6-dihydro-3-methyl-2,6-dioxo-4-trifluoromethyl-1(2H)-pyrimidyl)-benzoate (flupropacil), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(3-methoxycarbonyl-6-trifluoromethyl-pyridin-2-yl-sulphonyl)-urea sodium salt (flupyr-sulfuron-methyl-sodium), 9-hydroxy-9H-fluorene-9-carboxylic acid (flurenol),
- 5 (4-amino-3,5-dichloro-6-fluoro-pyridin-2-yl-oxy)-acetic acid (2-butoxy-1-methyl-ethyl ester, 1-methyl-heptyl ester) (fluroxypyr, -butoxy-propyl, -meptyl), 5-methylamino-2-phenyl-4-(3-trifluoromethyl-phenyl)-3(2H)-furanone (flurtamone), methyl [(2-chloro-4-fluoro-5-(tetrahydro-3-oxo-1H,3H-[1,3,4]-thiadiazolo-[3,4-a]-pyridazin-1-yliden)-amino)-phenyl]-thio-
- 10 acetate (fluthiacet-methyl), 5-(2-chloro-4-trifluoromethyl-phenoxy)-N-methylsulphonyl-2-nitro-benzamide (fomesafen), 2-amino-4-(hydroxymethyl-phosphinyl)-butanoic acid (ammonium salt) (glufosinate-(ammonium)), N-phosphonomethyl-glycine (isopropylammonium) (glyphosate, isopropyl-ammonium), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(3-chloro-4-methoxycar-
- 15 bonyl-1-methyl-pyrazol-5-yl-sulphonyl)-urea (halosulfuron-methyl), (R)-2-[4-(3-chloro-5-trifluoromethyl-pyridin-2-yl-oxy)-phenoxy]-propanoic acid (methyl ester, 2-ethoxy-ethyl ester, butyl ester) (haloxyfop, -methyl, -P-methyl, -ethoxyethyl, -butyl), 3-cyclohexyl-6-dimethylamino-1-methyl-
- 20 1,3,5-triazine-2,4(1H,3H)-dione (hexazinone), methyl 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-4-methyl-benzoate (imaza-
- methabenz-methyl), 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-5-methyl-pyridine-3-carboxylic acid (imazamethapyr), 2-(4,5-dihydro-4-
- 25 methyl-4-i-propyl-5-oxo-1H-imidazol-2-yl)-3-pyridine-carboxylic acid (imaz-
- apyr), 2-(4,5-dihydro-4-methyl-4-isopropyl-5-oxo-1H-imidazol-2-yl)-5-meth-
- oxymethyl-pyridine-3-carboxylic acid (imazamox), 2-(4,5-dihydro-4-methyl-
- 4-isopropyl-5-oxo-1H-imidazol-2-yl)-quinoline-3-carboxylic acid (imaza-
- 20 quin), 2-(4,5-dihydro-4-methyl-4-i-propyl-5-oxo-1H-imidazol-2-yl)-5-ethyl-
- pyridine-3-carboxylic acid (imazethapyr), N-(4,6-dimethoxy-pyrimidin-2-yl)-
- N'-(2-chloro-imidazo[1,2-a]-pyridin-3-yl-sulphonyl)-urea (imazosulfuron), N-
- 30 (4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(5-iodo-2-methoxycarbonyl-
- phenylsulphonyl)-urea sodium salt (iodosulfuron-methyl-sodium), 4-hydroxy-

- 3,5-diiodo-benzonitrile (ioxynil), N,N-dimethyl-N'-(4-isopropyl-phenyl)-urea (isoproturon), N-(3-(1-ethyl-1-methyl-propyl)-isoxazol-5-yl)-2,6-dimethoxy-benzamide (isoxaben), (4-chloro-2-methylsulphonyl-phenyl)-(5-cyclopropyl-isoxazol-4-yl)-methanone (isoxachlortole), (5-cyclopropyl-isoxazol-4-yl)-(2-methylsulphonyl-4-trifluoromethyl-phenyl)-methanone (isoxaflutole), 2-[2-[4-
5 [(3,5-dichloro-2-pyridinyl)-oxy]-phenoxy]-1-oxo-propyl]-isoxazolidine (isoxapyrifop), (2-ethoxy-1-methyl-2-oxo-ethyl)-5-(2-chloro-4-trifluoromethyl-phenoxy)-2-nitro-benzoate (lactofen), N'-(3,4-dichloro-phenyl)-N-methoxy-N-methyl-urea (linuron), (4-chloro-2-methyl-phenoxy)-acetic acid
10 (MCPA), 2-(4-chloro-2-methyl-phenoxy)-propionic acid (mecoprop), 2-(2-benzothiazolyloxy)-N-methyl-N-phenyl-acetamide (mefenacet), 2-(4-methylsulphonyl-2-nitro-benzoyl)-1,3-cyclohexanedione (mesotrione), 4-amino-3-methyl-6-phenyl-1,2,4-triazin-5(4H)-one (metamitron), 2-chloro-N-(2,6-dimethyl-phenyl)-N-(1H-pyrazol-1-yl-methyl)-acetamide (metazachlor), N'-(4-
15 (3,4-dihydro-2-methoxy-2,4,4-trimethyl-2H-1-benzopyran-7-yl-oxy)-phenyl)-N-methoxy-N-methyl-urea (metobenzuron), N'-(4-bromophenyl)-N-methoxy-N-methyl urea (metobromuron), (S)-2-chloro-N-(2-ethyl-6-methyl-phenyl)-N-(2-methoxy-1-methyl-ethyl)-acetamide (metolachlor, S-metolachlor), N-(2,6-dichloro-3-methyl-phenyl)-5,7-dimethoxy-1,2,4-triazolo[1,5-a]-pyrimidine-2-
20 sulphonamide (metosulam), N'-(3-chloro-4-methoxy-phenyl)-N,N-dimethyl-urea (metoxuron), 4-amino-6-tert-butyl-3-methylthio-1,2,4-triazin-5(4H)-one (metribuzin), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(2-methoxy-carbonyl-phenylsulphonyl)-urea (metsulfuron-methyl), S-ethyl-hexahydro-1H-azepine-1-carbothioate (molinate), 2-(2-naphthyloxy)-N-phenyl-propan-
25 amide (naproanilide), N-butyl-N'-(3,4-dichloro-phenyl)-N-methyl-urea (neburon), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(3-dimethylcarbamoyl-pyridin-2-yl-sulphonyl)-urea (nicosulfuron), S-(2-chloro-benzyl)-N,N-diethyl-thiocarbamate (orbencarb), 4-dipropylamino-3,5-dinitro-benzenesulphon-
amide (oryzalin), 3-[2,4-dichloro-5-(2-propinyloxy)-phenyl]-5-(t-butyl)-1,3,4-
30 oxadiazol-2(3H)-one (oxadiargyl), 3-[2,4-dichloro-5-(1-methyl-ethoxy)-phenyl]-5-(t-butyl)-1,3,4-oxadiazol-2(3H)-one (oxadiazon), N-(4,6-dimethyl-

pyrimidin-2-yl)-N'-(2-oxetan-3-yl-oxycarbonyl-phenylsulphonyl)-urea (oxa-
 sulfuron), 3-[1-(3,5-dichlorophenyl)-1-i-propyl]-2,3-dihydro-6-methyl-5-
 phenyl-4H-1,3-oxazin-4-one (oxaziclomefone), 2-chloro-1-(3-ethoxy-4-nitro-
 phenoxy)-4-trifluoromethylbenzene (oxyfluorfen), 1,1'-dimethyl-4,4'-bi-
 5 pyridinium (paraquat), 1-amino-N-(1-ethyl-propyl)-3,4-dimethyl-2,6-dinitro-
 benzene (pendimethalin), 4-(t-butyl)-N-(1-ethyl-propyl)-2,6-dinitro-benzen-
 amine (pendralin), 4-amino-3,5,6-trichloro-pyridine-2-carboxylic acid
 (picloram), 2-chloro-N-(2,6-diethyl-phenyl)-N-(2-propoxy-ethyl)-acetamide
 (pretilachlor), N-(4-fluoro-phenyl)-6-(3-trifluoromethyl-phenoxy)-pyridine-2-
 10 carboxamide (picolinafen), N-(4,6-bisdifluoromethoxy-pyrimidin-2-yl)-N'-(2-
 methoxycarbonyl-phenylsulphonyl)-urea (primisulfuron-methyl), 2-chloro-N-
 isopropyl-N-phenyl-acetamide (propachlor), N-(3,4-dichloro-phenyl)-propan-
 amide (propanil), 2-chloro-N-(2-ethyl-6-methyl-phenyl)-N-[(1-methyl-
 ethoxy)-methyl]-acetamide (propisochlor), S-phenylmethyl N,N-dipropyl-
 15 thiocarbamate (prosulfocarb), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-
 (2-(3,3,3-trifluoro-propyl)-phenylsulphonyl)-urea (prosulfuron), ethyl
 [2-chloro-5-(4-chloro-5-difluoromethoxy-1-methyl-1H-pyrazol-3-yl)-4-
 fluoro-phenoxy]-acetate (pyraflufen-ethyl), 4-(2,4-dichloro-benzoyl)-1,3-di-
 methyl-5-(4-methyl-phenylsulphonyloxy)-pyrazole (pyrazolate), 4-(2,4-di-
 20 chloro-benzoyl)-1,3-dimethyl-5-(phenylcarbonylmethoxy)-pyrazole (pyrazo-
 oxyfen), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(4-ethoxycarbonyl-1-methyl-
 pyrazol-5-yl-sulphonyl)-urea (pyrazosulfuron-ethyl), O-[2,6-bis-(4,6-
 dimethoxy-pyrimidin-2-yl-oxy)-benzoyl] diphenylmethanone-oxime (pyri-
 benzoxim), 6-chloro-3-phenyl-4-pyridazinol (pyridafol), O-(6-chloro-3-
 25 phenyl-pyridazin-4-yl) S-octyl thiocarbonate (pyridate), 6-chloro-3-
 phenylpyridazin-4-ol (pyridatol), methyl 2-(4,6-dimethoxy-pyrimidin-2-yl-
 oxy)-benzoate (pyriminobac-methyl), 2-chloro-6-(4,6-dimethoxy-pyrimidin-
 2-ylthio)-benzoic acid sodium salt (pyrithiobac-sodium), 7-chloro-3-methyl-
 quinoline-8-carboxylic acid (quinmerac), 2-[4-(6-chloro-2-quinoxalinyloxy)-
 30 phenoxy]-propanoic acid (ethyl ester, tetrahydro-2-furanyl-methyl ester) (qui-
 zalofop, -ethyl, -P-ethyl, -P-tefuryl), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(3-

ethylsulphonyl-pyridin-2-yl-sulphonyl)-urea (rimsulfuron), 2-(1-ethoximino-butyl)-5-(2-ethylthiopropyl)-3-hydroxy-2-cyclohexen-1-one (sethoxydim), 6-chloro-2,4-bis-ethylamino-1,3,5-triazine (simazin), 2-(2-chloro-4-methylsulphonyl-benzoyl)-cyclohexane-1,3-dione (sulcotrione), 2-(2,4-dichloro-5-methylsulphonylamino-phenyl)-4-difluoromethyl-5-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one (sulfentrazone), N-phosphonomethyl-glycine-trimethylsulphonium (sulfosate), N-(4,6-dimethoxy-pyrimidin-2-yl)-N'-(2-ethylsulphonyl)-imidazo[1,2-a]pyridine-3-sulphonamide (sulfosulfuron), 6-chloro-4-ethylamino-2-tert-butylamino-1,3,5-triazine (terbutylazine), 2-tert-butylamino-4-ethylamino-6-methylthio-1,3,5-triazine (terbutryn), 2-chloro-N-(2,6-dimethyl-phenyl)-N-(3-methoxy-2-thienyl-methyl)-acetamide (thenylchlor), methyl 2-difluoromethyl-5-(4,5-dihydro-thiazol-2-yl)-4-(2-methyl-propyl)-6-trifluoromethyl-pyridine-3-carboxylate (thiazopyr), 6-(6,7-dihydro-6,6-dimethyl-3H,5H-pyrrolo[2,1-c]-1,2,4-thiadiazol-3-ylideneamino)-7-fluoro-4-(2-propinyl)-2H-1,4-benzoxazin-3(4H)-one (thidiazimin), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(2-methoxy-carbonyl-thien-3-yl-sulphonyl)-urea (thifensulfuron-methyl), 2-(ethoximino-propyl)-3-hydroxy-5-(2,4,6-trimethyl-phenyl)-2-cyclohexen-1-one (tralkoxydim), S-(2,3,3-trichloro-2-propenyl) diisopropylcarbamothioate (triallate), N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-[2-(2-chloro-ethoxy)-phenylsulphonyl]-urea (triasulfuron), N-methyl-N-(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-N'-(2-methoxycarbonyl-phenylsulphonyl)-urea (tribenuron-methyl), (3,5,6-trichloro)-pyridin-2-yl-oxy-acetic acid (triclopyr), 2-(3,5-dichloro-phenyl)-2-(2,2,2-trichloro-ethyl)-oxirane (tri-diphane), 1-amino-2,6-dinitro-N,N-dipropyl-4-trifluoromethyl-benzene (tri-fluralin), N-[4-dimethylamino-6-(2,2,2-trifluoro-ethoxy)-1,3,5-triazin-2-yl]-N'-(2-methoxycarbonyl-phenylsulphonyl)-urea (triflusulfuron-methyl), N-(4-methoxy-6-trifluoromethoxy-1,3,5-triazin-2-yl)-N'-(2-trifluoromethyl-phenylsulphonyl)-urea (tritosulfuron), 2-pyridinesulphonamide, N-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]-3-[methyl(methylsulphonyl)amino] (WO-A-92/10660), 2-[[[(4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]-

amino]sulphonyl]-4-[[[(methylsulphonyl)amino]methyl]-methyl benzoate
(DE-A 43 35 297)

("Active compounds of group 2")

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and also, if appropriate,

(c) at least one crop-plant-compatibility-improving compound from the
following group of compounds:

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α -(1,3-Dioxolan-2-yl-methoximino)-phenylacetonitrile (oxabetrinil), α -(cyanomethoximino)-phenylacetonitrile (cyometrinil), 4-chloro-N-(1,3-dioxolan-2-yl-methoxy)- α -trifluoro-acetophenoneoxime (fluxofenim), 4,6-dichloro-2-phenyl-pyrimidine (fenclorim), 4-dichloroacetyl-3,4-dihydro-3-methyl-2H-1,4-benzoxazine (benoxacor), 1-methyl-hexyl 5-chloro-quinoxalin-8-oxyacetate (cloquintocet), 2,2-dichloro-N-(2-oxo-2-(2-propenylamino)-ethyl)-N-(2-propenyl)-acetamide (DKA-24), 1,8-naphthalic anhydride, ethyl 1-(2,4-dichloro-phenyl)-5-trichloromethyl-1H-1,2,4-triazole-3-carboxylate (fenchlorazol-ethyl), phenylmethyl 2-chloro-4-trifluoromethyl-thiazole-5-carboxylate (flurazole), 3-dichloroacetyl-5-(2-furanyl)-2,2-dimethyl-oxazolidine (furilazole, MON-13900), 4-dichloroacetyl-1-oxa-4-aza-spiro[4.5]-decane (AD-67), 2-dichloromethyl-2-methyl-1,3-dioxolane (MG-191), 2,2-dichloro-N-(1,3-dioxolan-2-yl-methyl)-N-(2-propenyl)-acetamide (PPG-1292), 2,2-dichloro-N,N-di-2-propenyl-acetamide (dichlormid), N-(4-methyl-phenyl)-N'-(1-methyl-1-phenyl-ethyl)-urea (dymron), 1-dichloroacetyl-hexahydro-3,3,8a-trimethylpyrrolo[1,2-a]-pyrimidin-6(2H)-one (BAS-145138), N-(2-methoxybenzoyl)-4-(methylaminocarbonylamino)-benzenesulphonamide, ethyl 4,5-dihydro-5,5-diphenyl-3-isoxazolecarboxylate (isoxadifen-ethyl), diethyl 1-(2,4-dichlorophenyl)-4,5-dihydro-5-methyl-1H-pyrazole-3,5-dicarboxylate (mefenpyr-diethyl) and 2,4-dichlorophenoxyacetic acid (2,4-D) and its derivatives.

("Active compounds of group 3").

2. Composition according to Claim 1, characterised in that

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R¹ represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl,

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R² represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl,

R³ represents hydrogen, fluorine, chlorine or bromine,

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R⁴ represents cyano, thiocarbamoyl, fluorine, chlorine or bromine,

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R⁵ represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, hydroxyl, mercapto, amino, hydroxyamino, aminosulphonyl, fluorine, chlorine, bromine, represents in each case optionally cyano-, hydroxyl-, methoxy-, ethoxy-, acetyl-, propionyl-, methoxycarbonyl- and/or ethoxy-carbonyl-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl, methoxy, ethoxy, n- or i-propoxy, n-, i-, s- or t-butoxy, methylthio, ethylthio, n- or i-propylthio, n-, i-, s- or t-butylthio, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, acetyl, propionyl, n- or i-butyroyl, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl, methylamino, ethylamino, n- or i-propylamino, n-, i-, s- or t-butylamino, represents in each case optionally cyano-, carboxyl-, fluorine-, chlorine-, bromine-, methoxycarbonyl- and/or ethoxycarbonyl-substituted ethenyl, propenyl, butenyl, ethinyl, propinyl, butinyl, propenyloxy, butenyloxy, propinyloxy or butinyloxy, represents in each case optionally fluorine- and/or chlorine-substituted acetylamino, propionylamino, methoxycarbonylamino, ethoxy-

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carbonylamino, methylsulphonylamino, ethylsulphonylamino, n- or i-propylsulphonylamino, n-, i-, s- or t-butylsulphonylamino, N,N-bis-methylsulphonyl-amino, N,N-bis-ethylsulphonyl-amino, N-ethylsulphonyl-N-methylsulphonyl-amino, N-acetyl-N-methylsulphonyl-amino, N-propionyl-N-methylsulphonyl-amino, N-n-butyroyl-N-methylsulphonyl-amino, N-i-butyroyl-N-methylsulphonyl-amino, N-s-butyroyl-N-methylsulphonyl-amino, N-pivaloyl-N-methylsulphonyl-amino, N-acetyl-N-ethylsulphonyl-amino, N-propionyl-N-ethylsulphonyl-amino, N-n-butyroyl-N-ethylsulphonyl-amino, N-i-butyroyl-N-ethylsulphonyl-amino, N-s-butyroyl-N-ethylsulphonyl-amino, N-pivaloyl-N-ethylsulphonyl-amino, or represents in each case optionally cyano-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s- or t-butyl-, trifluoromethyl-, methoxy-, ethoxy-, n- or i-propoxy-, difluoromethoxy- or trifluoromethoxy-substituted N-phenylcarbonyl-N-methylsulphonyl-amino, N-phenylcarbonyl-N-ethylsulphonyl-amino, N-thienylcarbonyl-N-methylsulphonyl-amino or N-thienylcarbonyl-N-ethylsulphonyl-amino.

3. Composition according to Claim 1, characterised in that

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R¹ represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl,

25

R² represents in each case optionally fluorine- and/or chlorine-substituted methyl, ethyl, n- or i-propyl,

R³ represents hydrogen, fluorine or chlorine,

30

R⁴ represents cyano or thiocarbamoyl, and

R⁵ represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, hydroxyl, mercapto, amino, hydroxyamino, aminosulphonyl, fluorine, chlorine, bromine, represents in each case optionally cyano-, hydroxyl-, methoxy-, ethoxy-, acetyl-, propionyl-, methoxycarbonyl- and/or ethoxycarbonyl-substituted methyl, ethyl, n- or i-propyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl, acetyl, propionyl, n- or i-butyryl, methoxycarbonyl, ethoxycarbonyl, n- or i-propoxycarbonyl, methylamino, ethylamino, n- or i-propylamino, represents in each case optionally cyano-, carboxyl-, fluorine-, chlorine-, bromine-, methoxycarbonyl- and/or ethoxycarbonyl-substituted ethenyl, propenyl, ethinyl, propinyl, propenyloxy or propinyloxy, represents in each case optionally fluorine- and/or chlorine-substituted acetylamino, propionylamino, methoxycarbonylamino, ethoxycarbonylamino, methylsulphonylamino, ethylsulphonylamino, n- or i-propylsulphonylamino, N,N-bis-methylsulphonyl-amino, N,N-bis-ethylsulphonyl-amino, N-ethylsulphonyl-N-methylsulphonylamino, N-acetyl-N-methylsulphonyl-amino, N-propionyl-N-methylsulphonyl-amino, N-n-butyryl-N-methylsulphonyl-amino, N-i-butyryl-N-methylsulphonyl-amino, N-s-butyryl-N-methylsulphonylamino, N-pivaloyl-N-methylsulphonyl-amino, N-acetyl-N-ethylsulphonyl-amino, N-propionyl-N-ethylsulphonyl-amino, N-n-butyryl-N-ethylsulphonyl-amino, N-i-butyryl-N-ethylsulphonyl-amino, N-s-butyryl-N-ethylsulphonyl-amino, N-pivaloyl-N-ethylsulphonylamino, or represents in each case optionally cyano-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, trifluoromethyl-, methoxy-, ethoxy-, difluoromethoxy- or trifluoromethoxy-substituted N-phenylcarbonyl-N-methylsulphonyl-amino, N-phenylcarbonyl-N-ethylsulphonyl-amino, N-thienylcarbonyl-N-methylsulphonyl-amino or N-thienylcarbonyl-N-ethylsulphonyl-amino.

4. Composition according to any of Claims 1 to 3, characterised in that the active compound of group 1 is selected from the following compounds:

2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-
5 trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-cyano-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-methyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-methylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one, 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonylamino-phenyl)-4-ethyl-5-difluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one.

5. Composition according to Claim 4 characterised in that the active compound of group 1 is the compound 2-(4-thiocarbamoyl-2-fluoro-5-ethylsulphonyl-amino-phenyl)-4-methyl-5-trifluoromethyl-2,4-dihydro-3H-1,2,4-triazol-3-one.
- 5
6. Composition according to any of Claims 1 to 5, characterised in that the active compound of group 2 is selected from the group consisting of atrazine, bromoxynil, chlorimuron-ethyl, clodinafop-propargyl, dicamba, dichlorprop-P, diflufenican, dimethenamid, fenoxaprop-(P)-ethyl, fentrazamid, flufenacet, 10 flupyrsulfuron-methyl-sodium, flurtamone, glufosinate-ammonium, glyphosate-isopropylammonium, imazamethapyr, imazamox, iodosulfuron-methyl-sodium, mesotrione, metolachlor, metosulam, metribuzin, metsulfuron-methyl, nicosulfuron, rimsulfuron, sulcotrione, sulfosate, sulfosulfuron, terbuthylazine, thifensulfuron-methyl, tralkoxydim, tribenuron-methyl.
- 15
7. Composition according to any of Claims 1 to 6, characterised in that the active compound of group 3 is selected from 1-methylhexyl 5-chloro-quinoxalin-8-oxy-acetate (cloquintocet), ethyl 1-(2,4-dichloro-phenyl)-5-trichloromethyl-1H-1,2,4-triazole-3-carboxylate (fenchlorazol-ethyl), ethyl- 20 4,5-dihydro-5,5-diphenyl-3-isoxazolecarboxylate (isoxadifen-ethyl), diethyl 1-(2,4-dichlorophenyl)-4,5-dihydro-5-methyl-1H-pyrazole-3,5-dicarboxylate (mefenpyr-diethyl) and 2,4-dichlorophenoxyacetic acid (2,4-D) and its derivatives.
- 25
8. Composition according to any of Claims 1 to 7, characterised in that from 0.01 to 1000 parts by weight, preferably from 0.02 to 500 parts by weight, particularly preferably from 0.05 to 100 parts by weight of active compound of group 2 are present per part by weight of active compound of group 1.
- 30
9. Use of a composition according to any of Claims 1 to 7 for controlling undesirable plants.

Selective herbicides based on N-aryl-triazolin(ethi)ones

A b s t r a c t

The invention relates to novel herbicidal synergistic active compound combinations comprising on the one hand known N-aryl-triazolin(ethi)ones and on the other hand known herbicidally active compounds and/or compounds which improve crop plant compatibility and which can be used with particularly good results for the selective control of weeds in various crops of useful plants.

COMBINED DECLARATION AND POWER OF ATTORNEY

ATTORNEY DOCKET NO

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought

on the invention entitled

SELECTIVE HERBICIDES ON THE BASIS OF N-ARYL-TRIAZOLINE(THI)ONES

the specification of which is attached hereto,

or was filed on **September 18, 2000**

as a PCT Application Serial No. **PCT/EP00/09089**

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s), the priority(ies) of which is/are to be claimed:

199 46 855.9 (Number)	Germany (Country)	September 30, 1999 (Month/Day/Year Filed)
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199 62 017.2 (Number)	Germany (Country)	December 22, 1999 (Month/Day/Year Filed)
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I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose the material information as defined in Title 37, Code of Federal Regulations, §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status)
		(patented, pending, abandoned)

(Application Serial No.)	(Filing Date)	(Status)
		(patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

JOSEPH C. GIL, Patent Office Registration Number 26,602; ARON PREIS, Patent Office Registration Number 29,426; LYNDANNE M. WHALEN, Patent Office Registration Number 29,457; THOMAS W. ROY, Patent Office Registration Number 29,582; RICHARD E. L. HENDERSON, Patent Office Registration Number 31,619; GODFRIED R. AKORLI, Patent Office Registration Number 28,779; N. DENISE BROWN, Patent Office Registration Number 36,097; NOLAND J. CHEUNG, Patent Office Registration Number 39,138; DIDERICO VAN EYL, Patent Office Registration Number 38,641; CAROLYN M. SLOANE, Patent Office Registration Number 44,339; JAMES R. FRANKS, Patent Office Registration Number 42,552; JACKIE ANN ZURCHER, Patent Office Registration Number 42,251; RAYMOND J. HARMUTH, Patent Office Registration Number 33,896; JOHN E. WROZINSKI, JR., Patent Office Registration Number 46,179; JENNIFER R. SENG, Patent Office Registration Number 48,851, all of Bayer Corporation, Pittsburgh, Pennsylvania 15205-9741

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1-00	FULL NAME OF SOLE OR FIRST INVENTOR <u>Dieter Feucht</u>	INVENTOR'S SIGNATURE <i>Dieter Feucht</i>	DATE 2002-02-22
	RESIDENCE D 40789 <u>Monheim</u> , Germany <u>DEX</u>	CITIZENSHIP German	
	POST OFFICE ADDRESS c/o Bayer Aktiengesellschaft, D 51368 Leverkusen, Germany		
2-00	FULL NAME OF SECOND INVENTOR <u>Mark Wilhelm Drewes</u>	INVENTOR'S SIGNATURE <i>Mark Wilhelm Drewes</i>	DATE 2002-2-22
	RESIDENCE D 40764 <u>Langenfeld</u> , Germany <u>DEX</u>	CITIZENSHIP German	
	POST OFFICE ADDRESS c/o Bayer Aktiengesellschaft, D 51368 Leverkusen, Germany		
3-00	FULL NAME OF THIRD INVENTOR <u>Peter Dahmen</u>	INVENTOR'S SIGNATURE <i>Peter Dahmen</i>	DATE 2002-02-15
	RESIDENCE D 41470 <u>Neuss</u> , Germany <u>DEX</u>	CITIZENSHIP German	
	POST OFFICE ADDRESS c/o Bayer Aktiengesellschaft, D 51368 Leverkusen, Germany		
4-00	FULL NAME OF FOURTH INVENTOR <u>Birgit Krauskopf</u>	INVENTOR'S SIGNATURE <i>Birgit Krauskopf</i>	DATE 2002-05-07
	RESIDENCE <u>Leawood</u> , KS 66224, USA	CITIZENSHIP German	
	POST OFFICE ADDRESS 14404 Windsor, Leawood, KS 66224, USA		
5-00	FULL NAME OF FIFTH INVENTOR <u>Mathias Kremer</u>	INVENTOR'S SIGNATURE <i>Mathias Kremer</i>	DATE 2002-03-13
	RESIDENCE D 51399 <u>Burscheid</u> , Germany <u>DEX</u>	CITIZENSHIP German	
	POST OFFICE ADDRESS c/o Bayer Aktiengesellschaft, D 51368 Leverkusen, Germany		
6-00	FULL NAME OF SIXTH INVENTOR <u>Rolf Pontzen</u>	INVENTOR'S SIGNATURE <i>Rolf Pontzen</i>	DATE 2002-02-28
	RESIDENCE D 42799 <u>Leichlingen</u> , Germany <u>DEX</u>	CITIZENSHIP German	
	POST OFFICE ADDRESS c/o Bayer Aktiengesellschaft, D 51368 Leverkusen, Germany		
7-00	FULL NAME OF SEVENTH INVENTOR <u>Arndt Wellmann</u>	INVENTOR'S SIGNATURE <i>Arndt Wellmann</i>	DATE 2002-03-10
	RESIDENCE D 51519 <u>Odenthal</u> , Germany <u>DEX</u>	CITIZENSHIP German	
	POST OFFICE ADDRESS c/o Bayer Aktiengesellschaft, D 51368 Leverkusen, Germany		

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED

FULL NAME OF EIGHTH INVENTOR Wilhelm Haas		INVENTOR'S SIGNATURE <i>Wilhelm Haas</i>		DATE 2002-03-18
RESIDENCE D 50259 Pulheim, Germany DEX		CITIZENSHIP German		
POST OFFICE ADDRESS c/o Bayer Aktiengesellschaft, D 51368 Leverkusen, Germany				
FULL NAME OF NINTH INVENTOR		INVENTOR'S SIGNATURE		DATE
RESIDENCE		CITIZENSHIP		
POST OFFICE ADDRESS				
FULL NAME OF TENTH INVENTOR		INVENTOR'S SIGNATURE		DATE
RESIDENCE		CITIZENSHIP		
POST OFFICE ADDRESS				
FULL NAME OF ELEVENTH INVENTOR		INVENTOR'S SIGNATURE		DATE
RESIDENCE		CITIZENSHIP		
POST OFFICE ADDRESS				
FULL NAME OF TWELFTH INVENTOR		INVENTOR'S SIGNATURE		DATE
RESIDENCE		CITIZENSHIP		
POST OFFICE ADDRESS				
FULL NAME OF THIRTEENTH INVENTOR		INVENTOR'S SIGNATURE		DATE
RESIDENCE		CITIZENSHIP		
POST OFFICE ADDRESS				
FULL NAME OF FOURTEENTH INVENTOR		INVENTOR'S SIGNATURE		DATE
RESIDENCE		CITIZENSHIP		
POST OFFICE ADDRESS				
FULL NAME OF FIFTEENTH INVENTOR		INVENTOR'S SIGNATURE		DATE
RESIDENCE		CITIZENSHIP		
POST OFFICE ADDRESS				
FULL NAME OF SIXTEENTH INVENTOR		INVENTOR'S SIGNATURE		DATE
RESIDENCE		CITIZENSHIP		
POST OFFICE ADDRESS				
FULL NAME OF SEVENTEENTH INVENTOR		INVENTOR'S SIGNATURE		DATE
RESIDENCE		CITIZENSHIP		
POST OFFICE ADDRESS				